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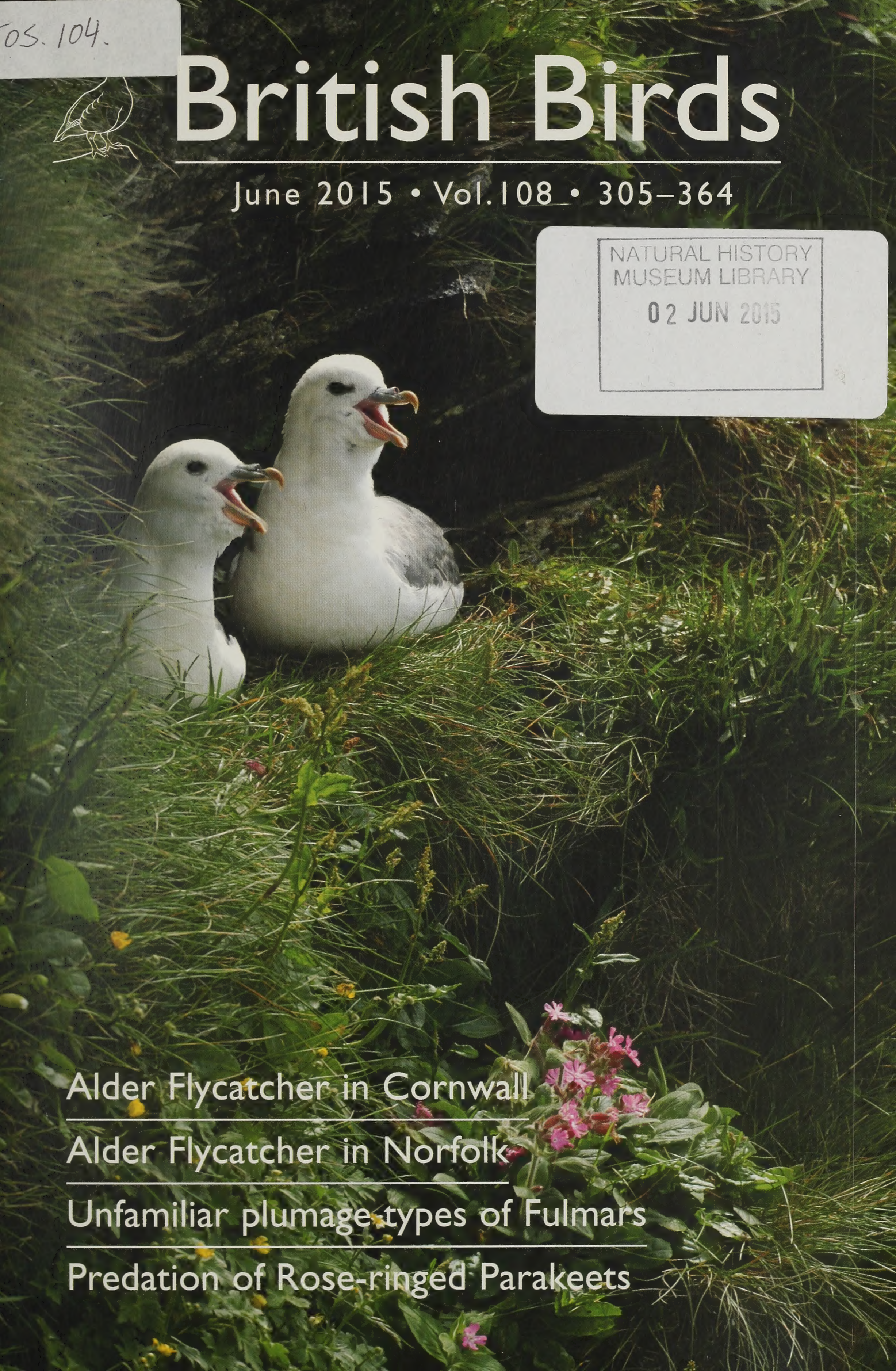

Alder Flycatcher in Cornwall

Alder Flycatcher in Norfolk

Unfamiliar plumage types of Fulmars

Predation of Rose-ringed Parakeets

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Front-cover photograph: Fulmars *Fulmarus glacialis*, Shetland, spring 2006. *Malcolm Schuyl/FLPA*

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British Birds

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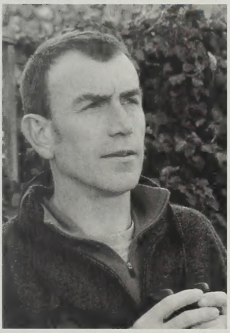

The *BB* eye editorial that begins this issue is rather different from most of the pieces that we have brought you over the past three years or so, but it is something that I feel is both important and likely to be of interest to all readers. We invited Patricia Zurita, the new CEO of BirdLife International, to write a piece for us; we gave her a blank canvas, and you can see overleaf what she did with it. On a bad day we can all moan about conservation: there are too many people sitting in offices, conferences and team meetings, too few of them out there with shovels digging a pond, planting trees or clearing rats from seabird colonies. But the reality is that we do need leaders with the vision to see the bigger picture and, yes, to communicate that vision effectively to governments and big business. Which inevitably means suits rather than shovels. In global terms, what we need to spend on conservation to make a real impact seems eminently achievable; but to realise that potential we need people at the top with the skill and vision to steer the conservation bus in the right direction. And it looks as though BirdLife might have found such a driver.

Roger Riddington

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BB eye

Birds, conservation and our planet: the bigger picture

Patricia Zurita

I joined BirdLife International as the new Chief Executive in February this year and, while coming from an environmental background, I'm not an ornithologist. I have always been fascinated by birds, however; they are exceptional at connecting us with the natural world and can be true ambassadors for the rest of nature.

Science gives insight: about ourselves, about the world we live in and the universe that we are part of. The study of birds has been especially good at bringing new insights. The theory of evolution by natural selection arose from Charles Darwin's visit to my home country, Ecuador, in 1835. His encounters with mockingbirds living on different islands in the Galápagos prompted him to question how they came to be there and, ultimately, how species arise.

Birds tell us many things, and not just about the birds themselves. Studying them has provided us, many times over, with a greater understanding about the state of our environment and the health of our planet. Think back to the 1950s, when populations of birds of prey began to decline: the cause was eventually tracked down to a new generation of pesticides, in particular DDT.

It will be no surprise to learn that science lies at the heart of BirdLife International's strategic thinking. Science drives our conservation understanding and our action to improve the status of birds around the world. We have made great efforts as a Partnership of 120 national organisations to build an unparalleled network of international expertise and experience to draw upon. This Partnership strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.

Today, the BirdLife Partnership is uniquely placed to generate and maintain comprehensive global datasets. Since 2004, we have been publishing *State of the World's Birds*, a report that synthesises this wellspring of knowledge. We also lead the evaluation of the conservation status of the world's birds, as the IUCN Red List Authority for birds.

So, what can we say about the state of birds in the twenty-first century and what does this tell us about the actions and costs needed for the conservation of nature? Our most recent assessment, in 2014, shows that 1,373 species (13% of extant species or roughly one in eight) are globally threatened with extinction. Looking at the trend over the past 20 years confirms that the state of the world's birds has been getting worse, with species moving ever faster towards extinction.

BirdLife Partners are leading efforts to act upon these data and to make a difference to species in trouble. The data and expert knowledge amassed and documented through the Red List process has allowed BirdLife to identify the priority conservation interventions needed to safeguard many of the world's most imperilled species. Our science leads to targeted conservation action and being cost-efficient with scarce conservation resources.

Today, around the world, BirdLife Partners and many other organisations are working to implement these actions through work that is demonstrating how a solid foundation in science is driving success and starting to turn the tide on birds and biodiversity loss. For example, BirdLife's Preventing Extinctions Programme has already begun to have an effect, taking action for some 40% of all globally threatened species.

One of our great success stories is our work on albatrosses. Hundreds of thousands of albatrosses die needlessly behind fishing boats each year. They are caught and drowned on baited longline hooks. In response, we established the Albatross Task Force in 2005, creating the world's first international team of seabird bycatch mitigation instructors. These teams, led by the RSPB (BirdLife in the UK) on behalf of the BirdLife Partnership, work on fishing vessels in the seabird bycatch hotspots of South America and southern Africa to demonstrate, test and improve mitigation measures (simple techniques that reduce bycatch). We are dramatically reducing seabird bycatch, in some fisheries by as much as 99%, but also maintaining fish catches and enhancing the sustainability and efficiency of fisheries. The BirdLife Partnership is bringing organisations in seven countries in the southern seas together to work as one, promoting a better future for albatrosses, engaging fishing communities, and developing innovative technology so that birds, biodiversity and people can all win.

Over the last four decades we have worked on the identification of Important Bird and Biodiversity Areas (IBAs). As a Partnership we have now identified over 12,500 IBAs across the globe. No other conservation organisation has been able to create such a blueprint for important sites for nature on our planet. This information has not only helped BirdLife Partners to prioritise their work, but it has also become an instrumental prioritisation tool for the conservation world. For example, the Convention on Biological Diversity (CBD) is using our data on gaps in protected area designation to push governments to select areas for protection that coincide with IBAs. The influence of IBA designation in guiding protected area creation is now widely recognised: legislators and planners are increasingly using IBA inventories to evaluate and improve the effectiveness of the protected area networks under their jurisdiction. In the European Union, the IBA inventory has helped to inform the designation of Special Protection Areas (SPAs) covering nearly 47 million hectares across 27 countries and is part of the EU's Birds and Habitat Directives.

In recent years we've been able to extend the IBA approach to the marine environment, by developing new methods to assess and predict seabird distribution and abundance. The list of marine IBAs is similarly guiding the definition of key Marine Protected Areas (MPAs) around the world.

Identifying priority areas for bird conservation alone is not enough: we need to ensure that sites are well managed and threats are counteracted. Only 40% of IBAs have any form of protection. Protecting the rest and ensuring good management of all are among the most urgent of our global conservation priorities. In 2014, we identified a set of over 360 IBAs at extreme risk of losing their biodiversity value. This list of 'IBAs in Danger' will be used to target enhanced conservation

Andy & Gill Swash www.worldwildlifeimages.com

172. The Araripe Manakin *Antilophia bokermanni* is one of the species benefiting from BirdLife's Preventing Extinctions Programme.

efforts for these sites through advocacy, campaigning and local action.

Today, our progress over the last 30 years in Europe is threatened: the European Commission is currently conducting a 'fitness check' of the Birds and Habitats Directives. There is political pressure, notably from the last UK Government, to reopen the directives in order to weaken them to make them more 'business friendly'. Europe has good legislation, which looks after our wildlife and has proven very successful when fully implemented. What needs to be 'checked' is not the law itself but its implementation; and where implementation has failed, we need to ensure that corrective measures are put in place. We need it fully implemented, not tampered with. You can tell European Leaders what you think at www.naturealert.eu and help us to protect one of the leading lights of environmental regulation, which not only supports birds and nature but also people in Europe and around the world.

But the connection between conservation, nature and people is crucial. We still have trouble, as conservation organisations, in convincing others that protecting birds and nature is key for the future of humanity. In pursuit of this goal, we are using our strong science foundation to demonstrate the principle that healthy, functional biological communities are vital, not just for nature, but also, and perhaps particularly, for people. BirdLife has been at the forefront of scientific efforts to understand better the role that birds and biodiversity play in delivering vital ecosystem services – those environmental resources used by people: access to clean air, water, food and materials; sustaining rural livelihoods; and enhancing the wellbeing of people worldwide.

BirdLife has helped to develop a *Toolkit for Ecosystem Service Site-based Assessment (TESSA* for short) to identify and assess ecosystem services at IBAs, and to evaluate how their value may change under different scenarios. The approach is accessible and inexpensive to implement, yet is scientifically robust. It has already been piloted by BirdLife Partners at a number of sites around the world, including at 27 IBAs in Nepal.

We need insights like this to 'give the big picture' on the economic benefits of healthy ecosystems to the decision-makers in governments and, increasingly, to the business and corporate sectors. We need to talk their

173. Black-browed Albatross *Thalassarche melanophris* hooked on squid: BirdLife has implemented simple, inexpensive measures that dramatically reduce the number of seabirds killed by longline and trawl fisheries without any negative effect on fish catches.

Owen Newman www.naturepl.com

174. Lake Natron, Tanzania, is one of over 360 'Important Bird and Biodiversity Areas in Danger' that have been identified by BirdLife as being at extreme risk of losing their natural value.

language to persuade them to 'buy in' to actions that favour the safeguarding of sites for the benefit of biodiversity.

Birds are our strongest bond with nature, with the world on which we depend totally. They are our best indicators for the state of the world. Factors that modify the environment, such as climate change, pesticide use, farming intensity, waste disposal, pollution levels and human disturbance, are all being measured and monitored in large part by seeing how bird populations are reacting and changing over time. Birds have taught, and continue to teach, us so much about ourselves and our planet.

Birds are giving a wake-up call as loud as all the cockerels on earth that greet the new day. They have given us the knowledge and understanding to prioritise and tackle the most urgent issues for our planet. We have demonstrated that, with the right action, our conservation efforts can reverse the fortunes of individual species and sites. We are at a point in time where a combination of climate change and loss of nature are the biggest, most pressing issues facing the planet.

However, our research has shown that current spending on conservation still falls far short of what is needed. BirdLife scientists looked at the economic investment necessary to meet internationally agreed targets for tackling the biodiversity crisis. They concluded that an annual investment of roughly US$80 billion is needed to meet the commitments that the world's governments have made on species and site conservation. This sounds like a lot, but it is in fact a relatively small and affordable sum compared with other aspects of global spending: for example, we spend US$469 billion annually on soft drinks. And it is a wise investment compared with the value of the services that nature provides. A 'no brainer' for birds and people!

Yes, the status of birds and the planet is grim: but approaches like the ones implemented by BirdLife will allow us to make a difference. By bringing 120 organisations around the world together, to act as one, guided by solid science and the local knowledge of each and all of our Partners, we will take this enterprise to the next level, to have a global impact that truly turns around the dire state of birds and nature.

Patricia Zurita, BirdLife International Chief Executive

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Nature Alert

The European Commission has started a review of the EU Birds and Habitats Directives, which have formed the cornerstone of nature conservation across Europe for more than 35 years.

The consultation was foreshadowed when the incoming President of the Commission, Jean-Claude Juncker, nominated a senior Maltese politician, Karmenu Vella, for the post of Environment Commissioner (*Brit. Birds* 107: 666). As N&c observed at the time, it's not quite the same as appointing Dracula to run a blood bank... but the nomination of a politician from the EU state with arguably the worst record on nature conservation was a controversial move by Mr Juncker.

Juncker tasked Vella with overhauling the existing environmental legislative framework to make it 'fit for purpose', starting with an in-depth evaluation of the Birds and Habitats Directives and assessment of the 'potential for merging them into a more modern piece of legislation'. That evaluation is now underway and there has been a co-ordinated response by 100 environmental groups in the UK to this thinly disguised assault on the EU Directives, which have helped to maintain some semblance of biodiversity in Europe since the 1970s. The Joint Links group, representing the 100 UK organisations, is warning that the EC REFIT 'Fitness Check' of the Birds and Habitats Directives is the 'single biggest threat to UK and European nature and biodiversity in a generation' and is motivated by politicians who mistakenly regard the Directives as a block on business and economic growth.

Kate Jennings of the RSPB, who chairs the Joint Links group, said: 'The Birds and Habitats Directives are the foundation of nature conservation in Europe and are scientifically proven to be effective where properly implemented. They deliver demonstrable benefits for nature, as well as significant social and economic benefits.'

The Joint Links group's response to the EC consultation includes a huge volume of evidence that demonstrates the effectiveness of the Directives in protecting nature, providing huge benefits for people AND providing a stable framework for responsible businesses. And individuals are also being urged to make their voices heard through the Nature Alert online tool found at www.naturealert.eu By mid May, more than 70,000 concerned people in the UK had sent their contributions to the consultation via this one-click forum.

A parallel campaign by BirdLife can also be accessed at www.birdlife.org/naturealert with sample answers to the questions posed in the EC consultation. You can follow developments in the campaign on Twitter at #ITSMYNATURE

Meanwhile, back in Malta...

As we reported last month (*Brit. Birds* 108: 248), the referendum to ban spring hunting of Common Quails *Coturnix coturnix* and Turtle Doves *Streptopelia turtur* on Malta was lost by the slenderest of margins and the hunting season commenced within three days of the poll.

As predicted, the hunters did not restrict their fire to the two quarry species and there were well-publicised incidents of supposedly protected species being killed too.

Less predictable was that the (pro-hunting) Maltese Government would cut the hunting season short in response to the hunters' flagrant disregard of the law. The season should have run until 30th April but the Government ended it three days early, on 27th.

When the pro-hunting lobby won the referendum vote on 11th April, with 50.4% of the vote, the Maltese Prime Minister Joseph Muscat told the hunters that the Maltese public had given them a last chance. He said: 'The hunters have to understand that the story has totally changed for them. Practically half the people do not want spring hunting to continue. They have to understand that they must respect the law in the spring hunting season.'

The shooting of a Common Kestrel *Falco tinnunculus* whose body fell into a school playground was probably the last straw. Mr Muscat was as good as his word and curtailed the spring hunting season. Remarking on the illegalities committed by hunters, Mark Sultana of BirdLife Malta said: 'Despite a referendum result that showed very strong opposition to spring hunting and the Prime Minister's remarks that this was the last chance for hunters, many of them just could not control themselves and we continued to witness illegal hunting throughout the season.'

See www.birdlifemalta.org

Three of our Hen Harriers are missing

We may bemoan Malta's inability to protect the migrant birds that pass through the island but illegal bird persecution also continues in England – even in the areas where our flagship species are supposedly protected.

The RSPB has reported that three nesting male Hen Harriers *Circus cyaneus* have vanished from the Lancashire moors in as many weeks in 'unexplained circumstances'. Lancashire Police and the RSPB are appealing for information on the birds' fate and the Society has put up a £10,000 reward for information leading to a conviction for what appears to be illegal killing.

All three birds disappeared from their nesting areas on the United Utilities Bowland Estate, the last bastion of the remnant English breeding population.

In the case of the first nest, a young male arrived shortly afterwards to take the older male's place: feeding the sitting female and thereby securing the clutch of eggs. But at the other two nests where the breeding male disappeared, no replacement males arrived on the moors and the females were forced to abandon their nests so that they could feed themselves.

There were only four successful Hen Harrier nests in England in 2014, two of which were at Bowland. With only one active nest now remaining at Bowland, the breeding success of the Hen Harrier throughout the English uplands in 2015 is severely threatened.

The United Utilities Bowland Estate has been the last remaining stronghold of the Hen Harrier in England for many years. Indeed, the RSPB has worked with the water company landowner and its shooting and farming tenants for more than 35 years. That three male Hen Harriers could 'disappear' in such a well-protected environment is particularly depressing.

The shooting lobby will suggest that the three birds were predated or abandoned their nests – but the 2008 Natural England report *A Future for the Hen Harrier in England?* showed that it is very unusual for a male Hen Harrier to abandon an active nest. And for three of them to do so?!

Of course, it's not just nesting male harriers that have disappeared in the Bowland area in suspicious circumstances. Last September two of the (satellite-tagged) young birds which fledged at the site went off the radar within three days of each other. The young females 'Sky' and 'Hope' were never relocated (*Brit. Birds* 107: 664–665).

Over the next five years, with EU LIFE+ funding, the RSPB will be satellite tagging as many Hen Harrier chicks as possible to monitor their movements. But they can only satellite tag young birds if there are any successful nests. Martin Harper, RSPB Conservation Director, said: 'Hen Harriers are hanging on by a thread in England and the disappearances of these three birds have made a desperate situation even worse. We don't know what has happened to them but we will find out and we will save our Hen Harriers.'

Andy Hay/rspb-images.com

175. Female Hen Harrier *Circus cyaneus* with nesting material.

Happily, some Buzzards can live to a ripe old age

Another raptor that has been in the firing line recently is the Common Buzzard *Buteo buteo* following its population upsurge after decades of persecution. Bristol-based ornithologist and *BB* editorial board member Robin Prytherch has conducted a long-term study of the birds (see *Brit. Birds* 102: 247–273, 106: 264–279) and sent N&c the following:

'I started my study on Buzzards 33 years ago, in 1982. After the main study started and when I found more time, my friend Lyndon Roberts and I started to ring nestlings. This involved yet another learning curve as we perfected, over several years, a safe method of tree climbing!

'In 1993, the first year of ringing, we totalled 21 chicks. In one nest there were two chicks and one (which I ringed on 19th June with ring number GF27415) proved to be very special. This year, on 14th April, I saw a Buzzard dead on the road as I returned home from a session in my study area. I investigated the badly crushed corpse; it was an adult and I saw that it was ringed.

'Back home I couldn't trace the number as one which we had ringed. I didn't look back far enough! It transpired that it was GF27415. This bird, which I placed back in its nest, was in my hands again after nearly 22 years. It was just 7 km from the ringing site. In the meantime it had probably been breeding somewhere nearby but where I do not know. I was amazed, as I wondered where it had been and thought of what had happened to me and my friends during those 22 years…'

New research to help farmland birds

Agricultural land makes up more than 60% of the British countryside. Farmland bird declines are not a new issue but many species, such as Skylark *Alauda arvensis* and Northern Lapwing *Vanellus vanellus*, are still disappearing and others, such as Yellowhammer *Emberiza citrinella* and Corn Bunting *E. calandra*, are showing no sign of recovery. Despite conservation measures that have been implemented to halt their declines, our farmland birds continue to struggle. That's why the BTO is launching a Farmland Bird Appeal to fund the second generation of research to find solutions that work for farmland birds, and farmers, to reverse the declines.

BTO scientists hope to identify how farmland birds are using the agri-environment scheme (AES) measures that have been designed to help them and find out why they aren't leading to the expected recoveries of farmland bird populations. Questions that need answering include: How are birds adapting and interacting with changing land use, climate, predators, competitors, parasites and disease? What is it about some options that produces negative effects on Skylarks? Are features being used as they were designed to be used? What effect is habitat having on productivity of farmland birds?

Using new and novel techniques, such as tracking and camera trapping, and by combining the BTO's traditional strengths of volunteer-led and professional science, the Trust aims to find out. See www.bto.org/support-us/current-appeals/farmland-bird-appeal

The BTO Cuckoos are back!

He's defied the odds and is back on our screens. As *Springwatch* and Chris Packham return to BBC2, his namesake Chris the satellite-tagged Cuckoo *Cuculus canorus* has returned to the Norfolk/Suffolk border from Africa for at least his fifth year.

In May 2011, Chris was one of the first Cuckoos fitted with a tiny solar-powered satellite tag to trace his migratory journeys when he was trapped near the BTO HQ at Thetford. Since he headed south in 2011, Chris has flown over, or visited, 28 different countries, crossed the Sahara Desert eight times and reached speeds of up to 60 mph.

Another Chris, Chris Hewson, the lead scientist on the project at the BTO, said: 'Chris was one year old when we fitted the satellite tag, which makes him five years old now, and quite an age for a Cuckoo; the oldest we have on record is almost seven. The tag was also given a life of 2–3 years, so that is getting quite old too. We had

Peter Cairns/Minden/FLPA

176. Common Cuckoo *Cuculus canorus*, Cairngorms, North-east Scotland, May 2005.

everything crossed for Chris to make it back again this year and give us another complete migration route, and he hasn't let us down.

'The information this remarkable bird has given us is unparalleled. He has helped identify many of the pressures that our Cuckoos face once they leave the UK and, more importantly, the routes that they take to get to their winter quarters in the Congo rainforest – a mystery until the first tagged Cuckoos went there in 2011. He deserves a medal for his massive contribution to science.'

There are nine other tagged Cuckoos that have returned to their breeding locations here in the UK, all providing vital information on their species – you can follow them at www.bto.org

British Birds sponsored a Cuckoo, 'BB', that was tagged in Scotland in May 2012 and returned in both 2013 and 2014. But there hasn't been any news of him since his tag last sent a signal from the Congo in November 2014.

Iraq identifies 82 Key Biodiversity Areas

The result of over ten years of field surveys, research and analysis has resulted in the selection of 82 individual sites within Iraq that represent some of the most important areas of the country in terms of their globally important biological diversity. The programme was conducted by the Iraqi Ministry of Environment and Nature Iraq, with support from the governments of Italy and Canada and several international conservation organisations and funds – including a *BB* conservation grant.

'We faced kidnapping, random violence and political conflicts throughout the work. This programme was completely unprecedented in a country where scientific field surveys of such a large scope had not taken place for over 20 years,' said Dr Azzam Alwash, the CEO of Nature Iraq, looking back on the often herculean efforts of the programme.

The 82 sites are located in every governorate of Iraq (excluding Nineva) with 45 sites in the Kurdish Autonomous region, 11 sites in Central and Western Iraq and 26 sites in southern Iraq. They were identified by applying international criteria for sites that support endangered and threatened species, areas where large populations of important species congregate and sites containing unique and threatened habitats.

'Protecting these 82 sites is critical to Iraq's future and the Ministry of Environment has already begun work to develop Iraq's Protected Area Program,' said Anna Bachmann, the KBA Program Manager at Nature Iraq. 'The threats against these sites are grave and several sites have likely been impacted by the current conflict with Islamic State. Additionally, there are certainly more sites that need to be identified but overall the environment in Iraq has been ignored for far too long.' Learn more on the Nature Iraq website at www.natureiraq.org

Cabinet reshuffle at *BB*

Peter Oliver retired from the *BB* board of trustees earlier this spring. Peter was a founder member of BB2000, the company that publishes *BB* and which was formed in the year 2000 when the journal was threatened with closure. His business acumen and commercial realism were central to *BB*'s survival in the early years of this century, and he continued to provide a significant input after the ship was steadied, so we shall miss him greatly.

Thanks also to Ciaran Nelson, who stood down as a *BB* director this spring, and welcome to Neil Bucknell, who has joined the board of trustees.

British Birds e-newsletter

A fortnight before *BB* landed on your doormat, we hope that our new monthly e-newsletter popped into your inbox (if you use e-mail and we have your address). It features News and comment, a featured book of the month, an up-to-date rarities round-up from our friends at Rare Bird Alert and a cracking RBA free offer for *BB* subscribers as a thank you to our loyal readers. Here's how *BB* Editor Roger Riddington introduced the first issue: 'Complementing the magazine and our website, this is an extra resource for subscribers – to keep you bang up to date with everything that's happening at *BB*. The mid-month release date allows us to give you a sneak preview of the next issue coming through your letterbox, something that our readers have been asking for. The newsletter also contains news and features that don't appear in the magazine…'

For extended versions of many of the stories featured here, and much more, visit our website www.britishbirds.co.uk

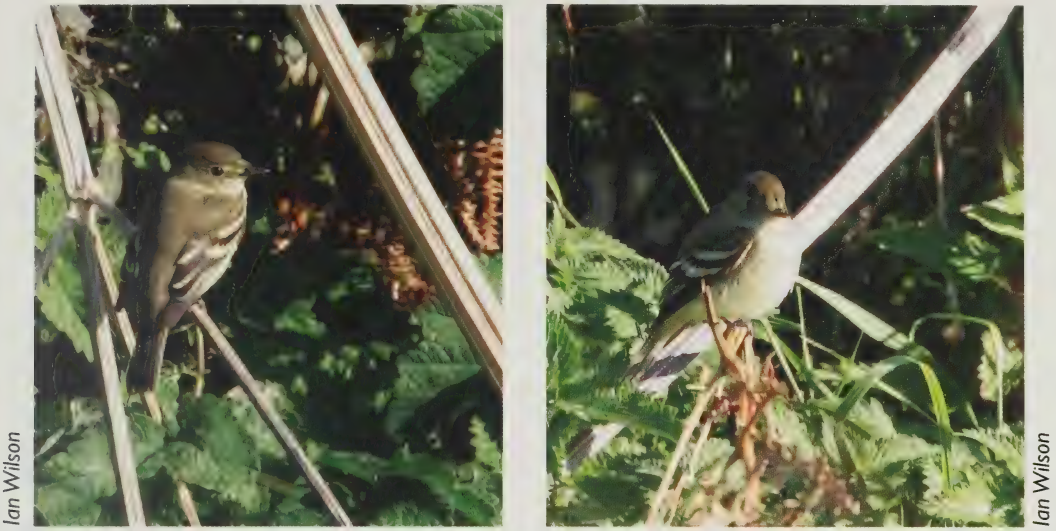
Alder Flycatcher in Cornwall: new to Britain

Kester Wilson

Abstract The discovery of an *Empidonax* flycatcher at Nanjizal, Cornwall, on 8th October 2008 is described. This bird, and a subsequent 'empid', at Blakeney Point in Norfolk on 25th–27th September 2010, generated considerable discussion. In both cases, identification lay between Alder *E. alnorum* and Willow Flycatchers *E. traillii*, considered to be two of the most challenging North American species to separate. The Nanjizal bird was trapped and all the biometric data fitted Alder while some characters were outside the published range of Willow Flycatcher. DNA analysis failed to determine the species involved, but did suggest that the bird was a female. The bird in Cornwall was eventually accepted as the first Alder Flycatcher for Britain.

Kester Wilson

When I moved to Cornwall in 1996, one of my first tasks was to look for a potential local patch that I could also use as a ringing site. Situated near the tip of Cornwall and quite close to Land's End, the Nanjizal valley looked a likely candidate and, with agreement from the landowners, I began improving the habitat to increase the extent of cover and shelter. Since that time the site has changed considerably, becoming much more attractive to migrant passerines. The large number of hours spent birding the site since 1996 produced, among other things, a Buff-bellied Pipit *Anthus rubescens* (in 2007, *Brit. Birds* 102: 570), but I never gave up the quest



177 & 178. Alder Flycatcher *Empidonax alnorum*, Nanjizal, Cornwall, October 2008.

for an even more exotic transatlantic vagrant.

At the start of October 2008 the weather systems over the North Atlantic appeared ideal for transatlantic vagrancy, with the jet stream tracking farther south than in previous years and extending across southwest England. My father, Ian, who had also been keeping an eye on the weather, came down to Cornwall for a week's holiday on the off chance of an encounter with a North American vagrant, previous low-pressure systems having already brought a few to Ireland. On the night of 6th/7th October, the far southwest of England bore the brunt of a fast-moving depression, and force-nine southerly winds lashed rain against my bedroom window. Unfortunately, it was not until 8th October that I was able to get out for some birding and mist-netting. A Common Nighthawk *Chordeiles minor* had been found on the nearby Lizard on 7th, and we were optimistic that the weather might have brought other North American birds to western Cornwall.

My father joined me at Nanjizal at first light on 8th but, perhaps not surprisingly, there were very few common migrants around, the only birds of note being half a dozen Firecrests *Regulus ignicapilla*. We continued around the seaward end of the valley and into a smaller side valley, where the local European Stonechats *Saxicola rubicola* were conspicuous. As we continued into the valley, I glimpsed a movement in the Bracken *Pteridium aquilinum* and raised my bins. Although the bird was slightly hidden by the Bracken, I could see an *Empidonax* face pattern and an obscured but still seemingly well-marked wing. Before I could say anything, and slightly in shock, I watched the bird flit into full view. A few expletives were uttered before I announced to my father that I had a first for Britain – although I wasn't sure which *Empidonax* species I was looking at! As the enormity of this started to sink in and the excitement began to build, I wracked my brain in an attempt to put a name to it. From memory, the bird's appearance fitted both Alder *E. alnorum* and Willow Flycatchers *E. traillii* (which as recently as the early 1970s were considered to be just one species – 'Traill's Flycatcher').

Although Nanjizal is my registered ringing site, I felt that the priority was to get the news out rather than try and catch the bird; after all, this was a first for Britain and once upon a time I would have wanted to be twitching it myself. Leaving my father with the bird, I set off to close the nets and put the news out. Since phone reception in the valley is poor, I ran up the hill and made contact with Mashuq Ahmad, who was able to spread the news. This was followed by a call to Mark Wallace, who I knew was birding nearby. I had to leave a message owing to the weak phone signal, although not long afterwards Mark arrived, out of breath having run from St Levan (in his wellies!).

At an early stage, the bird's greenish-toned upperparts (lacking washed-out, grey-brown tones), the smaller and more rounded head (appearing not as peaked as in many Willow), relatively long primary projection, and well-marked wings swayed me towards Alder, although I was aware of the difficulties involved in separating 'Traill's Flycatcher' into its two constituent species. It was while packing my nets away that doubts began to set in and my stress levels started to increase. Of the North American *Empidonax*, this bird didn't remind me of Yellow-bellied *E. flaviventris* or Least Flycatcher *E. minimus*, but I was less familiar with Acadian Flycatcher *E. virescens*, which has occurred as a vagrant in Iceland. As more people arrived, discussion of the bird's identity intensified, with a range of opinions being expressed. Fortunately, the bird spent most of the day in view, often showing well. However, the strong, low sunlight affected the bird's appearance and birders arriving later in the day perceived colours slightly differently from those who had seen it earlier. Clearly, the identification was going to be anything but straightforward, and while I still maintained that the bird was most likely an Alder Flycatcher, this opinion wasn't shared by all those present.

On that first day, it became clear that the identification of the two species comprising 'Traill's Flycatcher' had not progressed far since their formal separation in 1973. Even in eastern North America where they are regularly trapped at most bird observatories, the majority are identified and ringed as 'Traill's', rather than specifically identified as Alder or Willow (MacKenzie & LeClair 2014). In the pub that evening, Martin Elliot showed a number of images of the Nanjizal bird; in one the bird had a slightly spread wing showing the tip of P10 (the outermost primary) level with P6, which pointed towards Alder (Pyle 1997). But without full biometrics the question remained: would field photographs be sufficient to identify the bird, or would it need to be trapped? At this point plans were put in place to catch the flycatcher if it was still present the following morning.

Identification in the hand

Owing to lingering controversy about some ringers targeting rare birds, the BTO was understandably cautious about granting

James Hanlon

179. The Alder Flycatcher twitch at Nanjizal on 9th October 2008, looking across the valley to the bird's favoured area.

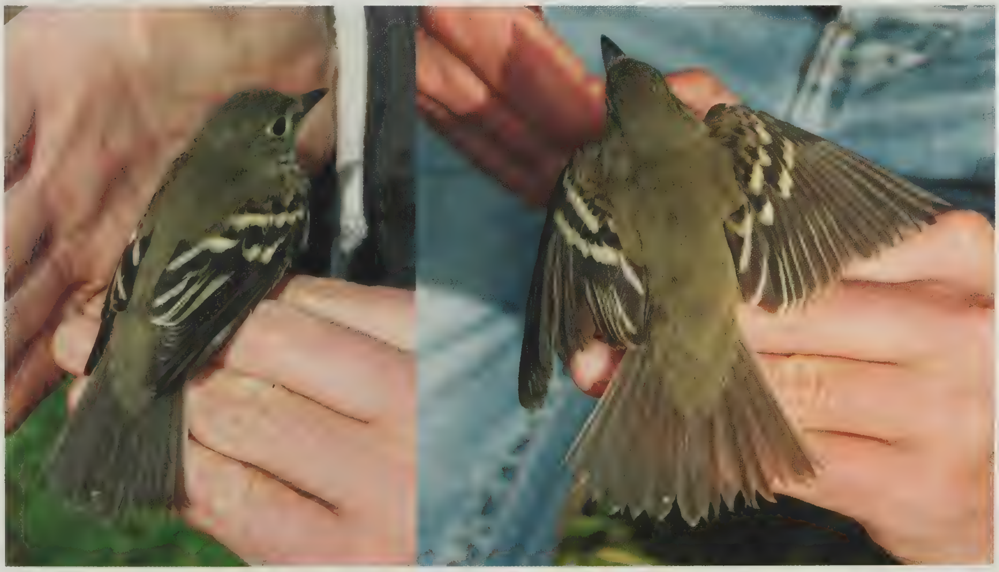
permission for the bird to be caught, even though it was on my registered site. However, discussions between the BTO, Natural England and the BOU on 9th October concluded that efforts could be made to catch the bird, in order to identify it to species. If we were successful, we were under instruction that the bird was to be kept for as short a time as possible. At about midday on 9th October, Mark Warren (another ringer) and I erected a mist-net in front of the bird's preferred bush. On the other side of the valley a large crowd of birders, photographers and a BBC film crew looked on, which was hardly relaxing... Luckily, the bird soon flew into the net. Key measurements and photographs were taken quickly (Mark checked all the key measurements independently) and the bird was released back to its favourite spot, where it soon resumed foraging. Although it was still present at dusk on 9th October, that evening saw the wind swing around to the west, meaning that the valley was no longer sheltered, and the flycatcher had gone by the morning of 10th October.

We gained a better impression of colour in the hand than was possible in the field, where the bright October sun affected colour perception and appearance. Features that were not apparent in the field but became obvious in the hand included the neat white throat, which contrasted with the yellow-washed breast; bolder head streaking than was apparent in the field; a conspicuous yellowish-buff wash on the greater-covert wingbar; and upperparts that were darker and greener than they appeared in the field, as were the olive-grey breast markings.

While being handled the bird was quite vocal, giving a drawn-out call, rather like a cross between the alarm calls of Golden Oriole *Oriolus oriolus* and Garden Warbler *Sylvia borin*. In an online recording of an Alder Flycatcher in the hand in Columbia (www.xeno-canto.org/explore?query=alder+flycatcher&pg=1), the bird can be heard giving a call similar to that of the Nanjizal bird, though the call in the recording is shorter and less vigorous.

Plumage

In the hand, the rich greenish-brown mantle was darker than it appeared in the field. The scapulars were the same colour as the mantle, the nape similar but slightly paler; the rump and uppertail-coverts were slightly greyer-brown than the mantle. The crown was similar in colour to the mantle or perhaps a slightly darker greenish-brown. In the hand, broad darker brown streaks on the crown could be seen, which are also apparent in photographs. There was a pale buff supercilium in front of the eye only. The lores were greenish-brown, similar to the mantle and crown, while the ear-coverts were patchy greenish-brown, lacking a pale grey wash.


Ian Wilson

180. Alder Flycatcher *Empidonax alnorum* in the hand, Nanjizal, Cornwall, October 2008.

There was a pale narrow eye-ring, being broadest at the front and rear of the eye.

On the closed wing, the greater coverts were dark grey-brown with broad pale tips. In the field the tips generally looked white, but in the hand they showed a light buff wash. The median coverts were the same colour as the greater coverts, while the lesser coverts showed greenish-brown edges (similar to the mantle), but with darker centres. The tertials had dark, grey-brown centres and a broad white fringe to the outer edge. The remiges were dark grey-brown, the inner primaries having narrow white tips and the secondaries conspicuous white edges that stopped short of the greater coverts. This created a dark grey-brown panel running parallel with the tips of the greater coverts.

The tail was grey-brown, paler than the primaries. The rectrices were fairly narrow, perhaps indicating a first-year bird.

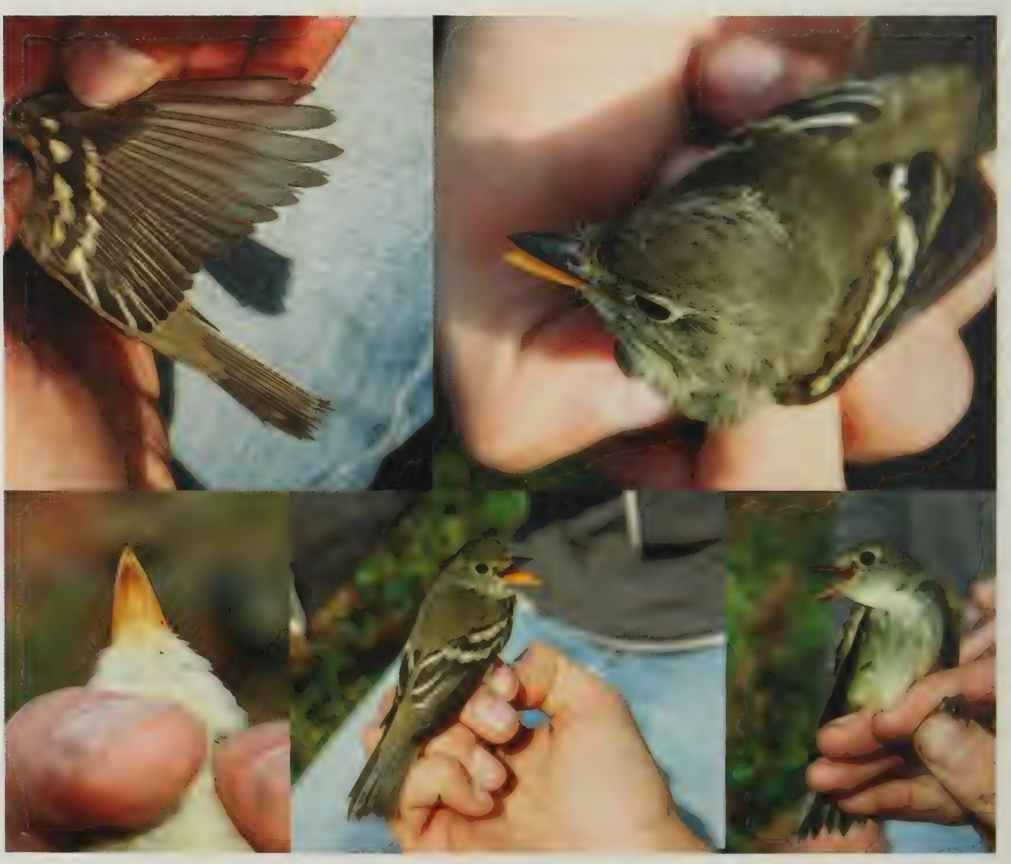
The throat was white, while the breast and vent were washed yellow (although the greenish-brown of the mantle extended onto the sides of the breast, which appeared greyer, with a band of broad, diffuse streaks). The flanks showed a pale yellow wash, this becoming more sullied towards the closed wing.

Bare parts

The legs were black, thus excluding Acadian Flycatcher, which has grey legs. The lower mandible was uniformly yellow and the upper mandible dark. The mouth lining was bright yellow, again suggesting Alder or Willow Flycatcher, and excluding Acadian, which shows a pale pinkish-yellow mouth lining (Pyle 1997).

Condition

The bird's flight feathers were in rather poor condition and had the faded brown appearance typical of many first-year passerines. The relatively poor quality of the feathers was also apparent from the number of fault bars in the tail, creating evenly broken tail tips to all except the central pair. This damage may



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181. Alder Flycatcher *Empidonax alnorum* in the hand, Nanjizal, Cornwall, October 2008.

have been exacerbated by the bird's tendency to crash around in the Bracken when feeding.

The fat and muscle scores were good: fat score 4 (scale 0–8) and muscle score 3 (0–3).

Biometrics

The key biometrics for the identification of *Empidonax* flycatchers in the hand were recorded as follows (primaries are numbered descendantly, so the outermost is P10):

Wing length (natural length, not maximum chord) = 70 mm
Tail length = 59 mm
Bill length from nares (anterior edge of nostril to bill tip) = 8.5 mm
Longest primary to P6 = 6.3 mm
P6 to P10 = 0 mm
P10 to P5 = 3.2 mm
P9 to P5 = 8.8 mm
P6 not emarginated

What the biometrics mean in terms of eliminating the possibility of the other eastern North American *Empidonax* can be summarised as follows:

- Wing length (70 mm) – excludes Least Flycatcher
- Tail length (59 mm) – excludes Yellow-bellied Flycatcher
- Bill length from nares (8.5 mm) – excludes Acadian and Least Flycatchers
- Longest primary to P6 (6.3 mm) – excludes Least (and Willow Flycatcher, which is not greater than 5.9 mm)
- P6 to P10 (0) excludes Yellow-bellied, Least (and Willow Flycatcher, which is not less than 0.9 mm)
- P10 to P5 (3.2 mm) – excludes Willow Flycatcher, which is not more than 2.9 mm
- P9 to P5 (8.8 mm) – excludes Least Flycatcher
- Lack of emargination on P6 – excludes Least Flycatcher

Biometrics also proved sufficient to eliminate the five *Empidonax* restricted to western North America, which are extremely unlikely to reach Europe: Hammond's *E. hammondii*, American Dusky *E. oberholseri*, Pacific-slope *E. difficilis*, Cordilleran *E. occidentalis* and American Grey *E. wrightii*.

Pyle (1997) also included two formulae that may separate Willow and Alder Flycatcher, and these were applied to the Nanjizal bird as follows:

Formula I: (longest primary to P6) minus (P5 to P10) – the latter value being positive if P5>P10 and negative if P10>P5.
For the Nanjizal bird this is 6.3 - (-3.2) = **9.5.**
The difference between the longest primary and P6 was 6.3 mm, which alone suggests Alder Flycatcher, as in 95% of Willow Flycatchers this would not exceed 5.9 mm. The measurement of P5 to P10 was -3.2 mm (i.e. P10 was longer than P5). Again, this difference suggests Alder Flycatcher, as 95% of Willow Flycatchers have a minimum value of -3.1 mm. The value derived from Formula I is 9.5. Plotting this value against the bill length (measured from nares) onto fig. 149 in Pyle (1997) shows that the Nanjizal bird falls exclusively within the range given for Alder Flycatcher and outside that for Willow Flycatcher.

Formula R: [(longest primary to P6) + (P9 to P5) + (wing length minus tail length)]/[(P6 to P10) + bill length].
For the Nanjizal bird this is [6.3 + 8.8 + (70 - 59)]/[0 + 8.5] = **3.07**. This falls within the range given by Pyle (1997) for Alder Flycatcher (2.41–4.68) and outside that for Willow Flycatcher (1.77–2.91); the ranges given are those within 95% confidence limits.

DNA analysis

One small contour feather became dislodged during ringing and we had high hopes that this would allow DNA analysis to be undertaken. Unfortunately, Iain Barr found the sample to be too small, but he was able to determine that the bird was a female. However, this strengthened the case for it being Alder Flycatcher. Female Willow Flycatcher has the bluntest wings of the 'Traill's Flycatcher' group so the pointed wing of the Nanjizal bird strongly suggests that it was an Alder Flycatcher.

Taxonomy

In the taxonomic partitioning of Traill's Flycatcher, AOU (1973) noted that the song of the generally more southern and western *E. traillii*, a bird of more open country, is widely interpreted as 'fitz-bew', whereas that of *E. alnorum*, generally a more northern bird of the boreal forest region, is interpreted as 'fee-bee-o'. The recommendation was that the English name for the species *E. traillii* became Willow Flycatcher and that for *E. alnorum* became Alder Flycatcher. Recognising that identification was going to remain problematic, AOU also commented that where circumstances do not permit specific identification 'Traill's Flycatcher' remains available for the complex (AOU 1973). In the 40+ years since their formal recognition as two species, song remains the primary means of identification, and many observers believe that Alder Flycatcher can still be conclusively distinguished from Willow Flycatcher in eastern North America only by voice, and for some trapped birds by measurements (Lowther 1999).

Distribution and transatlantic vagrancy

Alder Flycatcher is a long-distance migrant, breeding in the boreal forest region of Alaska, and Canada from Yukon Territory and northern British Columbia east to Newfoundland. It also breeds in the northern and eastern states of the USA from Minnesota and Wisconsin through Michigan to northern New Jersey, and south in the Appalachians from Pennsylvania through western Maryland to northeast West Virginia. The breeding range lies to the north of that of the Willow Flycatcher, which is mostly in the USA, although their ranges do overlap in northernmost USA and southern Canada.

Alder and Willow Flycatchers are long-distance migrants but due to the difficulty in separating them outside the breeding season, information on the migration timing and routes is unclear, and there is probably considerable overlap. Alder Flycatcher is known to winter in northern South America, whereas Willow winters farther north, from southern Mexico to Panama, but the extent of overlap in South America is uncertain (Lowther 1999).

There is one previous record of an Alder Flycatcher from Europe, a bird trapped at Kverkin, Eyjafjöll, Iceland, on 10th October 2003 (https://notendur.hi.is/yannk/empaln.html). Subsequent to the Nanjizal bird, another has reached Britain, being discovered in Norfolk on 25th September 2010 (McCallum 2015). The Willow Flycatcher has not been recorded in Europe, but Acadian and Least Flycatchers have both reached Iceland.

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Editorial comment **On behalf of BBRC, Adam Rowlands and Paul French commented:** 'This was a great find for Kester and just reward for his rarity-hunting efforts in the Cornish valleys. It also represented an extremely challenging record to assess. Kester is to be congratulated for acting quickly to arrange the necessary permissions for trapping the bird and seeking advice on how to manage the situation. If the bird hadn't been caught and the biometric data obtained, the identification may never have been resolved to species level.

'When a rarity is trapped, BBRC encourages independent sets of measurements from two experienced ringers, to provide greater confidence in the results, and it was encouraging that this was achieved. The second set of biometric data was, disappointingly, not submitted with the original description, although this was submitted by e-mail at a later date and further supported the identification. The pressure surrounding ringers in such a scenario, trapping a first for Britain with an audience of expectant birders lined up on the other side of the valley (and, in this case, a BBC film crew) should not be underestimated.

'The record was initially circulated around BBRC before the results from the DNA analysis had been reported. Nonetheless, the first voters felt that the bird could be safely identified in the absence of DNA evidence. The biometrics were considered sufficient to confirm the identification as Alder since all the measurements appeared to be within the ranges provided by Pyle (1997). All the confusion species of *Empidonax* appeared to show at least one measurement that was incompatible with the Cornish bird. This is illustrated in table 1.

'Both formulae included in Pyle (1997), as outlined by KW above, also resulted in the identification as Alder, although the reliability and applicability of 'Formula I' has been thoroughly quashed (see MC comments below). Finally, plumage and bare-part coloration were considered to be compatible with Alder Flycatcher and further eliminated potential confusion species, as emphasised by observers in North America (e.g. R. Mulvihill pers. comm.). Although several members expressed caution around the challenges involved in safely identifying this species in North America, the record was accepted unanimously and passed to BOURC.

'BOURC expressed concern regarding the validity of the identification, as detailed below, and referred the record back to BBRC to reconsider. The record was recirculated, giving BBRC members the opportunity to consider the BOURC comments. BBRC members remained of the opinion that the evidence from biometrics and plumage was sufficient to confirm the identification and again accepted the record unanimously. It was then returned to BOURC for a final circulation.'

Table 1. Biometrics of the Nanjizal Flycatcher compared with those given for *Empidonax* flycatchers in Pyle (1997). Those measurements for which the Nanjizal bird was out of range are shown in red. Note that primaries are numbered descendantly.

	Nanjizal	Alder	Eastern Willow	Western Willow	Yellow-bellied	Acadian	Least	Hammond's	American Dusky	American Grey
Wing	70	66–77	63–74	61–72	60–72	65–80	56–67	62–75	61–73	63–76
Tail	59	50–61	48–59	49–60	46–55	52–62	49–61	52–62	57–68	55–66
Bill tip–nares	8.5	7.6–9.3	8.1–10.0	8.4–10.3	7.0–9.4	9.2–10.1	6.3–8.4	6.0–8.0	6.5–8.9	7.6–10.4
Longest P–P6	6.3	4.0–7.4	3.1–5.9	1.7–4.8	2.2–6.7	5.2–9.3	0.8–3.7	1.8–5.5	0.0–3.0	0.9–4.6
P10–P5	3.2	0.0–5.8	-1.9–2.9	-3.1–1.7						
P6–P10	0	-1.4–3.3	0.9–4.5	2.0–7.0	1.9–6.3	-2.9–1.7	2.7–7.0	2.8–8.0	6.0–10.8	4.1–8.1
P9–P5	8.8	7.2–11.6	6.3–10.2	4.7–9.1	5.8–11.5	8.6–14.4	3.4–7.8	5.6–11.6	2.2–5.5	3.5–8.8
Emargination	7	7	7	7	6/7	7	6	6	6	6

Martin Collinson, Chairman of BOURC, commented: 'It is fair to say that identification criteria for the two species of 'Traill's Flycatcher' are, after more than 40 years, still under development. Their vocalisations remain the best way to distinguish between them and the literature is full of warnings about trying to identify migrants on the basis of plumage and biometrics. It is important to remember that these two taxa were previously considered subspecies of the same species, because they are so similar, and separating non-calling birds remains one of the biggest challenges in Nearctic ornithology.

'In order to assess the identification of the Nanjizal individual, BOURC had to decide not only whether the details in the submitted record were sufficient to identify the bird according to current criteria, but also whether the current criteria were reliable. Although biometric formulae can be used to distinguish the two species, there is some doubt about their robustness, most notably for separating first-year birds. These issues are discussed below. If ringers in USA and Canada commonly do not attempt to identify trapped Traill's Flycatchers to species, it is not just because it takes too long, but also because a very significant proportion may not be identifiable.

'Taking published biometric data at face value, however, an identification can be attempted. As shown in table 1 above, the measurements of the Nanjizal bird were apparently consistent only with Alder Flycatcher.

'The numbers given by Pyle (1997) are not absolute ranges but means +/- 2 standard deviations (SD) – the 95% range. Assuming that Eastern Willow Flycatcher is the most likely alternative to Alder for the Nanjizal bird, comparison of biometric values suggests:

LP–P6 Nanjizal flycatcher = 6.3. Eastern Willow Flycatcher mean = 4.5, SD = 0.7. So Nanjizal bird is 2–3 SDs from the mean, which rules out 95–99% of Eastern Willow Flycatchers.

P10–P5 Nanjizal = 3.2. Eastern Willow mean = 0.5, SD = 1.2. So Nanjizal bird is 2–3 SDs from the mean, i.e. rules out 95–99% of Eastern Willows.

P6–P10 Nanjizal = 0. Eastern Willow mean = 2.7, SD = 0.9. So Nanjizal bird is 3 SDs from the mean, i.e. rules out 99% of Eastern Willows.

'The three primary measurements are unlikely to be completely independent. However, to have three values that each rule out >95% of Eastern Willows, one of which, P6–P10, effectively eliminates Eastern Willow on its own, strongly suggests that the identification as Alder Flycatcher is safe to within BOURC's level of "certainty", notwithstanding any variation in measurements of first-year birds.

'BOURC had to tackle one problem measurement: Pyle (1997) gave values for wing length minus tail length (95% confidence intervals) as 12.4–20.3 mm for Alder, 11.2–20.1 mm for Eastern Willow and 7.1–14.6 mm for Western Willow Flycatcher. The Nanzijal bird was 11 mm, out of the range of Alder (in the lowest percentile) and, indeed, at the extreme lower edge of Eastern Willow (lowest 2.5%). After correspondence with experts, BOURC considered that this apparent discrepancy was not fatal to the record. Tail length is a difficult measurement to replicate accurately, even on an undamaged tail, and the measurement obtained more or less ruled out both Alder and Eastern Willow Flycatchers, so was clearly problematic.

'Much has been made of the so-called 'Formula I' for identification of Alder and Willow Flycatchers, derived in Stein (1963), modified for the shorter bills of immature birds by Hussell (1990), and critically evaluated by Seutin (1991). The formula uses the measurement "I" = (longest P–P6) - (P5–P10) and uses this to derive value "X" = 7.95 + 0.15 * **I** - bill length. Willow Flycatchers have X < 0, Alder Flycatchers X > 0. At face value, the measurements for the Nanjizal flycatcher give X = 7.95 + 0.15 * 9.5 – 8.5 = 0.875, suggesting Alder. The caveat of this analysis is that the formula was based on specimens (which dry and shrink). There are no hard data to suggest how this affects LP–P6, etc., but Winker (1993) suggested a consensus bill shrinkage of about 0.6%. The "shrunken bill length" of the Nanjizal bird would have been around 8.45 mm, which does not threaten the identification.

'Hussell (1990) modified the Formula I for immature birds with shorter bills, which produces a formula: $X = 7.64 + 0.144 * I - \text{bill length}$. Willow Flycatchers have $X < 0$, for Alder Flycatchers $X > 0$. For the Nanjizal bird, $X = 7.64 + 0.144 * 9.5 – 8.5 = 0.508$, again suggesting Alder Flycatcher.

'Seutin (1991) reassessed Formula I using an independent set of Willow and Alder Flycatchers, whose identification was confirmed by song, from both allopatric ranges and areas of sympatry. This study found Formula I to be unreliable. Willow Flycatchers can fall significantly the wrong side of the line and the 95% confidence limits of the two species overlap virtually completely. There are confirmed Willow Flycatchers that, according to this formula, are virtually identical to the Nanjizal bird.

'In light of this analysis, the Nanjizal bird could be either species. The conclusion is that the Nanjizal bird, and perhaps nearly all 'Traill's Flycatchers' cannot by identified using Formula I.

'Pyle (1997) also gave another means of distinguishing between the two species, "Formula R". $R = [(LP–P6)+(P9–P5)+(\text{wing} - \text{tail})]/[(P6–P10) + \text{bill}]$. For Alder Flycatcher, $R = 2.4–4.7$; for eastern populations of Willow Flycatcher, $R = 1.8–2.9$; and for western populations of Willow Flycatcher $R = 1.0–2.2$. For the Nanjizal bird, $R = (6.3 + 8.8 + 70 - 59)/(0 + 8.5) = 3.07$, suggesting Alder Flycatcher. Again, the formula is based on skins and should not be applied uncritically to wild birds. It is not possible to fully translate the measurements of the Nanjizal bird to estimate its measurements as a skin. Winker (1993) produced shrinkage data for 29 Traill's Flycatchers and assembled data from other taxa to suggest a mean 1.7% wing shrinkage and (for Traill's) 2.77% tail and 0.6% bill shrinkage. This leads to an estimation for the Nanjizal bird, if it had been dried and prepared as a specimen, of: bill = 8.45 mm, wing = 68.81 mm, tail = 57.37 mm. Using these numbers in Formula R: $R = (6.3 + 8.8 + 68.81 - 57.37)/0 + 8.45) = 3.06$, i.e. still consistent with Alder Flycatcher. Were the bill of the Nanjizal bird still growing, its value under Formula R could be reduced as an adult, but the bill would need to be 9.73 mm (i.e. to grow another 1.2 mm) before it came within range of Willow Flycatcher under Formula R. BOURC considered this to be implausible.

'As described in the account above, several plumage features of the Nanjizal bird were considered to point towards Alder, rather than Willow Flycatcher or any other *Empidonax.* It was felt possible that the slight average structural and plumage differences between Alder and Willow Flycatchers may, as a whole, be more than the sum of their parts, and give each species a characteristic jizz that may allow tentative identification of birds in the field. However, BOURC did not feel prepared to accept identification without biometrics and/or DNA confirmation. Although Ian Barr at the University of East Anglia had kindly agreed to analyse DNA from a single feather that was shed during processing after the bird was trapped, it did not yield sufficient good-quality DNA for a successful identification. The DNA evidence did, however, suggest that the bird was a female (Ian Barr pers. comm.). On the basis of the biometrics, BOURC considered that there were three semi-independent measurements that effectively ruled out Willow Flycatcher, one of which (P6–P10) was beyond any realistic amount of variation that Willow Flycatcher might be expected to show. With the exception of the discounted tail measurement, all the biometrics were within the normal range of Alder Flycatcher. Of the two formulae, one (Formula I) does not discriminate, and the other (Formula R), to the best current knowledge, securely identifies the Nanjizal bird as an Alder Flycatcher.

'In contrast, assessment of the provenance of the Nanjizal bird was straightforward, as this was clearly a wild bird. Alder Flycatcher is a long-distance migrant that routinely crosses large areas of ocean and there is a previous record from Iceland which strongly suggests an unassisted transatlantic crossing. There were no fast-moving weather systems crossing the Atlantic in early October 2008, but a large and relatively slow-moving low-pressure system moved westwards from Newfoundland on 4th October and became almost stationary west of Iceland on 6th–7th October, at a time when the Azores high was slipping southwards. As a result, a strong westerly airstream was in place across the full width of the North Atlantic in the days preceding the bird's discovery, which coincided with a marked arrival of other American landbirds in the southwest of Britain and Ireland, including two Common Nighthawks *Chordeiles minor*, and single Red-eyed Vireo *Vireo olivaceus*, Grey-cheeked Thrush *Catharus minimus*, American Buff-bellied Pipit, Scarlet Tanager *Piranga olivacea* and Blackpoll Warbler *Setophaga striata.*

'Nevertheless there were a couple of apparent discrepancies that needed to be addressed by BOURC. The condition scores did not seem typical for a newly arrived transatlantic vagrant, but were considered by BOURC not to be a major concern. More perplexing was the feather damage to the wings and, in particular, the tail. At least some of these feathers were snapped in a pattern that was unprecedented, in BOURC's experience, in a wild bird, even one that has been crashing about in Bracken. The pattern of breakage was, however, very similar to that which occurs commonly in captivity. A potential explanation, that the bird has spent time flying round in the semi-confined environment of a container ship, seemed unlikely in light of the arrival in weather conditions suitable for vagrancy, with a good supporting cast. There was no reason to speculate further that this was anything other than a natural occurrence of a wild bird, and perhaps the lesson to be learnt is that unusual feather damage should not preclude consideration of a vagrancy event.

'The indicative plumage features, combined with the almost forensic analysis of biometrics confirming identification as Alder Flycatcher, and the consideration of wild provenance, convinced BOURC to add the species to Category A on the second assessment. On first circulation the bird was accepted as a "Traill's Flycatcher" but some members wanted further clarification before making a call to species level. The unanimous opinion of experts in USA and Canada was that identification of Willow and Alder Flycatcher on the basis of biometric formulae was possible for many but not all birds; that extreme caution must be exercised with immature birds; and that identification of every individual in a vagrant context would not be possible. It would seem that more work is required before the identification of these species solely on biometric criteria is fully defined, and it is not certain that it will be fully resolvable. When BOURC considered this record for the second time, members explicitly addressed these points, and concurred that some individual Alder Flycatchers would not be identifiable in a vagrant context without vocal or genetic analysis. However, it was unanimously agreed that this bird was identifiable on the basis of the criteria described above. Whereas, in the end, the identification was confirmed to the satisfaction of both committees, on another day, with another bird, with slightly different biometrics, confirmation of identification of a *bona fide* Alder Flycatcher may not have been possible. It is likely that other "Traill's Flycatchers" will occur in Britain in future that will not be identifiable to species level.

'Since the record was assessed, further doubt has been cast on our ability to identify migrant "Traill's Flycatchers". Modern sequencing of a series of Alder and Willow Flycatchers collected during 1973 and 1974 in the Tuxtla Mountains, Mexico, and of a separate smaller series of reference skins, revealed widespread misidentification on plumage and biometric criteria (Novitch *et al.* 2015). In that study, 94% of birds identified as Willow Flycatcher by museum workers were in fact genetically Alder Flycatchers. The proportion of Willow Flycatchers misidentified as Alder Flycatcher was smaller (e.g. 1 out of 11 reference skins) but even this, if representative, is a worryingly high proportion. The committees will, at some point, have to consider whether they are still happy to accept silent individuals of these species without genetic evidence.

'It may also be time to revisit the rules that ringers have to work under in the case of an important bird that needs to be trapped. The conditions placed on the ringers in this case, when extremely accurate measurements were required in a short space of time, with the public looking on, exposed them to exactly the sorts of pressures where errors could be made. Furthermore, if licence conditions were arranged such that they had been allowed to remove a couple of contour feathers for DNA analysis, this bird could have been identified beyond doubt, and on the British List long ago.'

Short paper

Alder Flycatcher in Norfolk: second for Britain

Common Chiffchaff *Phylloscopus collybita* and Alder Flycatcher *Empidonax alnorum*, on Blakeney Point

Abstract An Alder Flycatcher *Empidonax alnorum* at Blakeney Point, Norfolk, in September 2010, turned up two years after the first British record of this species, in Cornwall. The Norfolk bird was accepted as the second for Britain and this short paper describes the record.

On 24th September 2010 the weather forecast for Norfolk hinted that a good seawatch was on the cards so in the early morning I set out along Blakeney Point for the sea hide, which, at the time, could be found nestled among the northernmost dunes. As predicted, the wind duly turned northwest then increased in strength, and right on cue seabirds began to appear close inshore. By the afternoon it was blowing a gale and a constant stream of birds were passing, the highlights being an exceptional passage of nearly 500 Great Skuas *Stercorarius skua* and good views of Leach's Storm-petrels *Oceanodroma leucorhoa* and Long-tailed Skuas *S. longicaudus*. As a past warden, I had the luxury of watching until dusk, staying the night on the Point then seawatching again from first light the following morning.

At dawn on the 25th I set out with high hopes of another good seabird passage but, in spite of the gale-force winds, there were many fewer seabirds passing. By mid morning I had given up on the sea and began to look for any migrant passerines that might have been blown in. The landscape was wild and spectacular – the tide was one of the highest of the year, covering much of the marsh, and a wall of foam had built up in front of the breakers, highlighting the shape of the spit that ran away eastwards towards Cley. Huge waves were crashing onto the beach sending clouds of spray and foam over the ridge and into the harbour.

Many of the *Suaeda* bushes were underwater so the area of available cover for migrant birds was greatly reduced. As I left the hide, I glimpsed the black-and-white flash of a Northern Wheatear's *Oenanthe oenanthe* tail and found a Common Redstart *Phoenicurus phoenicurus* cowering on the shingle on the leeward side of the ridge. I took a few photos of the landscape then headed towards the Plantation to see if any other migrants were sheltering there. As I approached, a young Peregrine *Falco peregrinus* was hanging in the air above the trees, its eyes firmly fixed on a Song Thrush *Turdus philomelos*. On seeing me, the falcon shot off, flushing a Redwing *T. iliacus* from the dunes in the process – my first of the autumn.

Another Wheatear appeared on the roof of the huts but there seemed to be little else around so I headed back to the Lifeboat House. After lunch, one of the wardens, Paul Nichols, joined me for another look around. The Lupins, a small area of cover beside the Lifeboat House, held a Goldcrest *Regulus regulus* and a Garden Warbler *Sylvia borin* indicating that birds were indeed arriving, albeit in small numbers. Next we headed to the Plantation, Paul taking the western edge and me the eastern. Numbers of Song Thrushes had increased to three and Redwings to two.

I had begun to feel slightly jaded after an early start and spending too long looking through a telescope, but a movement in the last clump of trees sharpened my senses. A Common Chiffchaff *Phylloscopus collybita* was flitting about in a small lupin *Lupinus arboreus* bush. I watched it for several minutes as it darted after insects before I noticed that further back, viewable between a fork in one of the White Poplars *Populus alba*, was another passerine. Even before I refocused my binoculars, I thought its shape looked odd and it clearly had some bold markings on its wings. It remained motionless, perched back-on, peering over its shoulder at me and I could then see that its plumage was adorned with bold whitish double wing-bars and tertial edges, its large

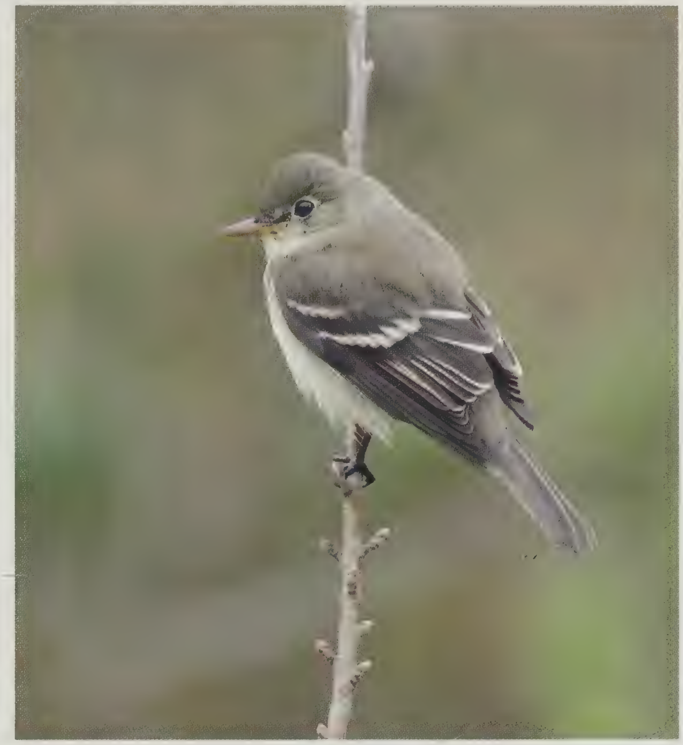
182 & 183. The scene along the shingle en route to the Point; and the crowd gathered to see the bird, during a lull between squalls.

dark eye was surrounded by a thin pale eye-ring and it had a stout insect-eating bill. It was clearly an American *Empidonax* flycatcher and the sight of it left me wholly stunned. I gestured to Paul to join me quickly. The bird was still on the same branch when Paul arrived so he was able to get onto it quickly and confirm that I wasn't hallucinating.

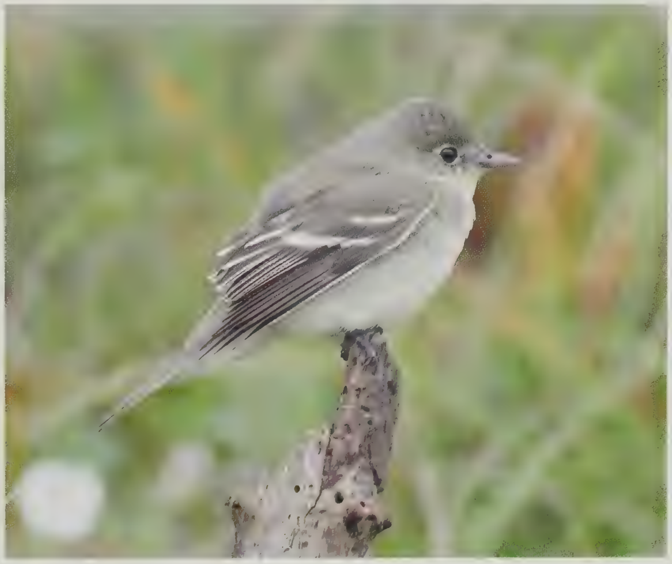
Its behaviour, coupled with the fact that I had recently checked the Plantation, strongly suggested that it had literally just arrived. Looking back, I am surprised how calm and relaxed we both were. Because of its location, most rarities on Blakeney Point originate from the Old World, while a typical passerine rarity demands a lot of hard work for a decent view as the bird moves through the swathes of dense *Suaeda* bushes. This bird, however, was simply sitting there larger than life – I guess we were in shock at seeing a Nearctic passerine on the north Norfolk coast, especially one that didn't feature on the established list of vagrant American landbirds.

Not long after the bird's discovery, a rapidly darkening sky and the first spots of rain signalled a torrential downpour, so we retreated to the Lifeboat House for shelter and to fetch Ed Stubbings, our telescopes, notebooks and my video camera. There were no relevant field guides in the Lifeboat House and, as the rain was still hammering down, we searched the internet for anything to help us to identify the bird. It was soon clear that the *Empidonax* flycatchers are an identification minefield, so we turned the computer off again – the real world was far more exciting and trying to work out the bird's identity was clearly not going to be instantaneous.

As the rain eased, the three of us returned to the Plantation, to find no trace of the bird. Two uncommonly long minutes later there was still no sign and I well remember a



Mike Lawrence



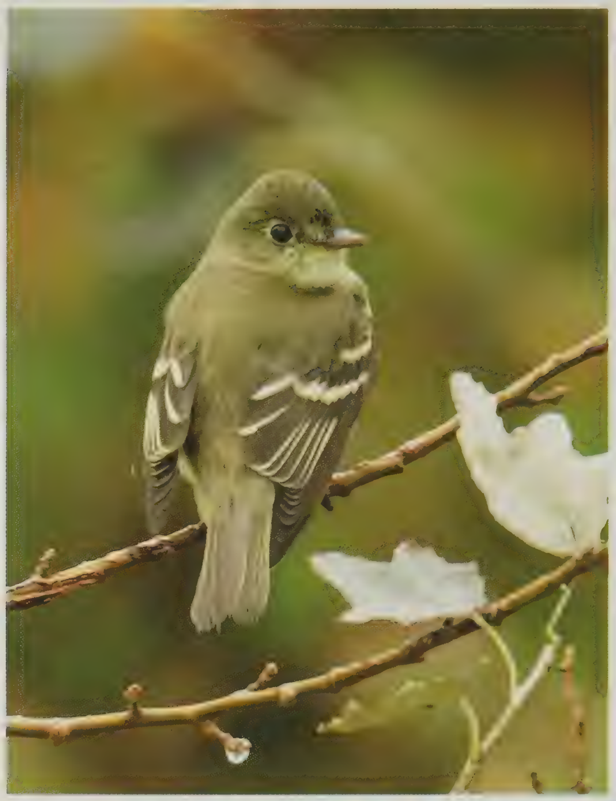
Mike Lawrence

184 & 185. Alder Flycatcher *Empidonax alnorum*, Blakeney Point, Norfolk, September 2010.

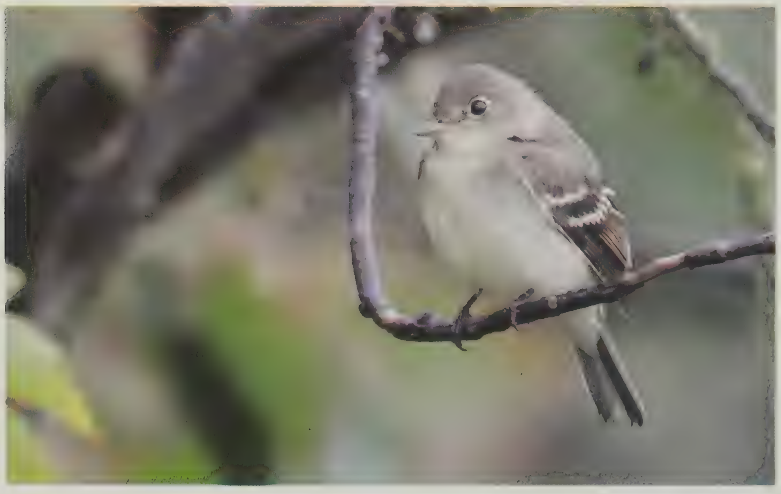
feeling of mounting horror, which turned instantly to relief when Ed suddenly announced: 'I've got it!' By filming through my telescope I managed to obtain some reasonable video footage including details of the head and bill shape, the wings and primary projection. It was all a bit of guesswork but at least we had some photographic documentation just in case the bird decided to move on. We were well aware that in this particular situation photographs were likely to play a key role in identifying the flycatcher. We phoned the other Blakeney Point regulars before I released the news to the pager services.

The resulting twitch was almost as noteworthy as the bird and will be long remembered by those who made the trek through the gale. Not long after the news was released the weather deteriorated rapidly with the wind increasing to gale force as a chain of squalls swept across the Point. As the crowd at the Plantation began to swell, we decided to head out to the outer points to see if any other migrants were to be found. Out on the exposed ridges the weather conditions were truly appalling with driving rain and an angry sea crashing on the beach, throwing up clouds of foam mixed with sand that stuck to our clothing.

It didn't take long for a substantial crowd to gather at the Plantation, and I decided to head back down the Point with a friend. As we skirted the dunes we encountered a string of anxious twitchers, the first individual clearly exhausted and staggering along the path desperate to know how much further he had to walk! A few more weather-beaten birders hurried by, some in good shape, others manifestly not! Out on the open shore the weather conditions were truly grim and looking down the ridge we could see a series of figures staggering towards us set against the crashing breakers – the scene was reminiscent of one of those low-



Mike Lawrence



Richard Stonier

186 & 187. Alder Flycatcher *Empidonax alnorum*, Blakeney Point, Norfolk, September 2010.

budget zombie films! Initially we found it really amusing but it was quickly apparent that some were not only in an anxious mental state but were also genuinely struggling with walking the three miles on shingle into the face of a northwesterly gale.

Despite the terrible weather, the flycatcher showed very well during its stay. Its arrival generated a huge amount of interest and it was seen by many observers. The bird's identity was much debated, starting with Alder *E. alnorum*, Willow *E. traillii* or Least *E. minimus*. Various other possibilities were touted, including Acadian *E. virescens* and Yellow-bellied *E. flaviventris*, the latter owing to the presence of a distinct lemon-yellow wash on its throat, central breast and belly. The colour and strength of this lemon wash doesn't show up well in many photos but it was obvious in the field and was reminiscent of that of a young Icterine Warbler *Hippolais icterina*.

Having very limited experience of *Empidonax* flycatchers, I had little to contribute to the identification debate. Initially, I chose to ignore what was being posted on internet forums. Instead, I repeatedly compared my field impressions and photographs of the Blakeney bird to images of various *Empidonax* flycatchers found on the internet. I was surprised at just how often Alder Flycatcher came up as a match – not very professional maybe but it was an interesting exercise and one that at least enabled me to form a tenuous opinion. Eventually the majority feeling of more experienced observers, both here and in North America, was that the identity of the Blakeney Point bird was a first-winter Alder Flycatcher and the record was finally accepted as such by BBRC.

Although the bird was reasonably active during much of its stay, it became noticeably so during the late afternoon of the 27th. During this time it was seen to make repeated high aerial pursuits after insects, often vertically above the canopy. It also briefly ventured as far as the large Yucca *Yucca gloriosa* plant near the boardwalk, and even once to the Lupins. Such active behaviour late in the day from migrant birds is often a hint that they are ready to migrate that same evening. And, with the weather rapidly improving, it came as no great surprise when the flycatcher was not present the following morning.

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Editorial comment **Paul French, Chairman of BBRC, commented:** 'After the Cornish bird, no-one was seriously expecting another *Empidonax* flycatcher to test British birders so soon, let alone one on the east coast. The identification of this bird has undergone a very different process from that for the Cornish one, but is one that BBRC feels is as robust as many other decisions. With five potential confusion species to contend with, the field identification of "empids" is probably the most difficult challenge facing birders along the Atlantic coasts of Europe. In North America, Alder and Willow Flycatchers, previously lumped together as "Traill's Flycatcher", are routinely left unidentified, even in the hand, while good views and detailed notes are required to distinguish Least, Acadian and Yellow-bellied from the Traill's pair. All five are potential vagrants, although Willow and Yellow-bellied have yet to be recorded in the Western Palearctic.

'The identification process was a very public one, debated on various forums on both sides of the Atlantic. Based on a combination of plumage and structural features, Yellow-bellied, Least and Acadian Flycatchers were quickly ruled out while the bird was still present. Separating Alder from Willow proved much trickier, but there are now several voices in North America proclaiming that this species pair might actually be easier to separate in the field than in the hand. This may come as no great surprise to European birders brought up on a diet of tricky unstreaked *Acrocephalus* warblers that until recently were "unidentifiable" in the field.

'The Blakeney flycatcher exhibited all of the field features of Alder. These include: the more centrally positioned peak to the crown (compared with a rear peak in Willow), shortish bill, greener mantle tones, bold eye-ring (especially behind the eye, where it became tear-shaped, compared with that of Willow which may be less bold, especially behind the eye) and details of the wing structure, as described by Kevin DuRose at www.birdguides.com/webzine/article.asp?a=2337 and including a noticeably long P10, with the tip falling close to that of P6 on the closed wing (P10 being the outermost primary). In Willow, P10 tends to fall level with, or nearer to, P5. The excellent photographs available, such as those reproduced here as plates 184 & 185, provided critical detail of wing structure.

'There is also some anecdotal evidence to support the identification as Alder. Observers at Cape May have discovered that most Willow Flycatchers move through early in autumn, leaving mainly Alder Flycatchers migrating through in September (Richard Crossley pers. comm., and *contra HBW*), although given the identification difficulties it is unclear how robust this is. Alder Flycatcher is also the more northerly breeding species of the two and is thought to leap-frog Willow Flycatcher, which winters around the Caribbean, to winter in northern South America.

'The identification of the Blakeney flycatcher as Alder was accepted by BBRC after a second circulation with nine votes in favour of Alder and one in favour of Alder/Willow. Under our constitution, we do accept a record on recirculation with only nine votes in favour, and it is perhaps worth reproducing the relevant paragraph from our constitution here to set the entire decision in context:

BBRC Constitution 5.3.3 www.bbrc.org.uk/about/constitution/5-the-assessment-of-records
At an individual level, an Accept vote implies a very high (though not always total) confidence in the mind of the voter that the record was as claimed. Voters try to apply their individual judgement and level of confidence when making their decision. This is usually a subjective judgement and will be influenced by many factors, including the quality of views, the light conditions, the apparent care with which the bird has been observed, the species involved, the experience of the observer and many other factors. Consistency with previous decisions will also be considered and is very important to ensure the long-term value of the BBRC database. Confidence may not be absolutely total, but needs to be very high for an Accept vote to be given.

'This recognises that, in some rare cases such as this, there is room for some slight level of doubt. There is a remote possibility that the Norfolk bird may have been a Willow Flycatcher, but given that all the features currently known to aid identification pointed to Alder, while nothing indicated Willow, and Alder is perceived to be the more likely of the two, the identification as Alder Flycatcher was accepted.

'BBRC would like to thank Richard Crossley for providing insightful comments on the identification of this bird and its status at Cape May in the autumn.'

Unfamiliar plumage types of Fulmars in the North Atlantic

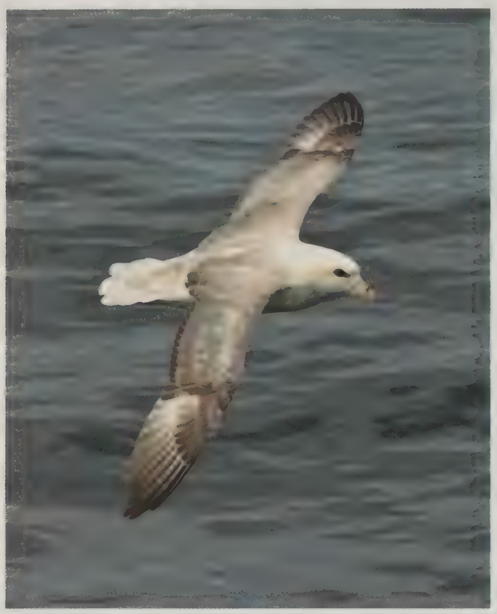
Robert L. Flood and Hein van Grouw

Abstract We investigate records of three unfamiliar plumage types of the Fulmar *Fulmarus glacialis* in the North Atlantic: extra pale, extra dark and those with a dark distal tail-band. The possible explanations for each case are: 1) aberrant or variant 'Atlantic Fulmar' *F. g. glacialis*; 2) hitherto unrecorded morphs of Atlantic Fulmar; and 3) vagrant 'Pacific Fulmar' *F. g. rodgersii*. We conclude that all records involve aberrant or variant Atlantic Fulmars. A dark distal tail-band noted on about 5% of Fulmars in Spitsbergen is a previously unreported variation.

The Fulmar *Fulmarus glacialis* is a common and well-studied seabird in the North Atlantic, with plumage polymorphism that is thought to be well understood. However, extra-pale and extra-dark birds are occasionally seen, which fall outside the range of established variation. In addition, we discovered that about 5% of birds in Spitsbergen have a dark distal tail-band, which is previously undocumented. This paper summarises our investigation of these unfamiliar plumage aspects.

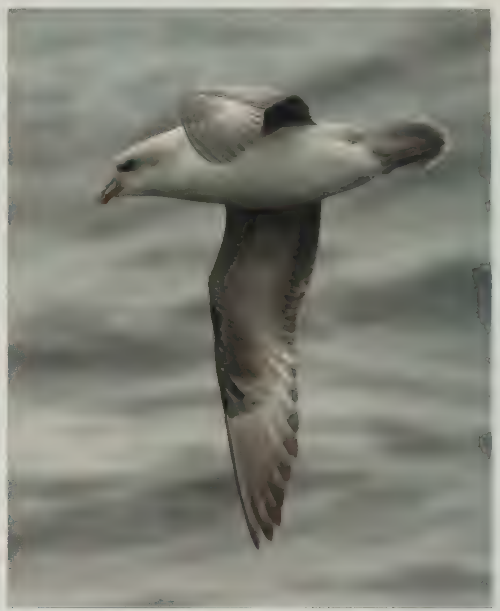
Fulmar taxonomy

The Fulmar occurs in the North Pacific and in the North Atlantic and two subspecies are recognised: 'Pacific Fulmar' *F. g. rodgersii* breeds in the Arctic zones of the North Pacific, while 'Atlantic Fulmar' *F. g. glacialis* breeds widely in the North Atlantic north of about 45°N. Salomonsen (1965) recognised the race *F. g. auduboni*, for low Arctic and boreal breeders of the Atlantic form, based on morphometrics and morph distribution, and this was followed by, for example, Brooke



Ashley Fisher

188. LL Atlantic Fulmar, Scilly, 8th August 2010.



Ashley Fisher

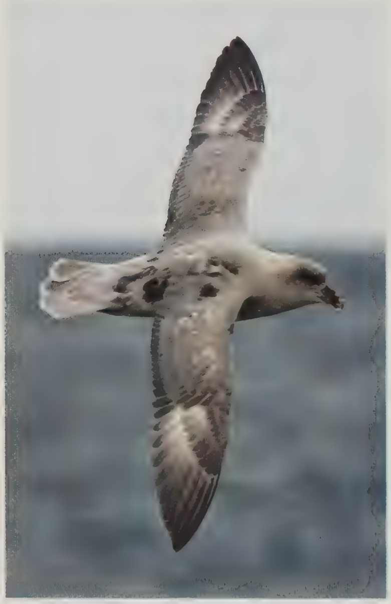
189. L Atlantic Fulmar, Scilly, 21st October 2011.

(2004) and Onley & Scofield (2007). However, since the variation is complex we treat the Atlantic form as a single subspecies.

Kerr & Dove (2013) found genetic and morphological divergences between the two races of Fulmar that were comparable with some procellariid sister species, and recommended treating them as full species. Divergence of the two has been maintained for around two million years, spanning warm periods with Arctic ice melt that increased the likelihood of movement between the Pacific and the Atlantic, and thus providing opportunities for interbreeding. However, Kerr & Dove found no evidence to support the proposition that Atlantic Fulmar comprises two subspecies.

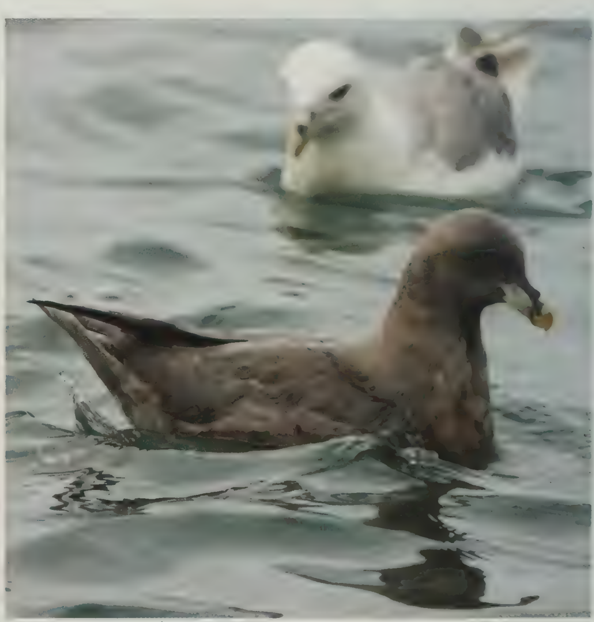
Typical Fulmar morphs

Both Fulmar subspecies are polymorphic (see



Julian Bell

190. D Atlantic Fulmar, Barents Sea, Russia, 29th September 2010.



Ingvar Sigurðsson

191. DD Atlantic Fulmar, Vestmannaeyjar, Iceland, 4th September 2011.

Box 1. Six morph categories for the Fulmar *Fulmarus glacialis*.
The plumage descriptions exclude the remiges and rectrices, which vary between Atlantic and Pacific Fulmars.

LLL Largely *snowy white* overall.

LL *Whitish* head and neck clearly demarcated from mid bluish-grey mantle, scapulars, back, rump, and upperwing-coverts; light bluish-grey uppertail-coverts (sometimes rump); whitish underparts and underwing-coverts.

L *Light bluish-grey* crown, nape and hindneck grading into mid bluish-grey mantle; mid bluish-grey scapulars, back, rump, uppertail-coverts, upperwing-coverts and underwing-coverts; underparts variable light bluish-grey to whitish, breast always whitish.

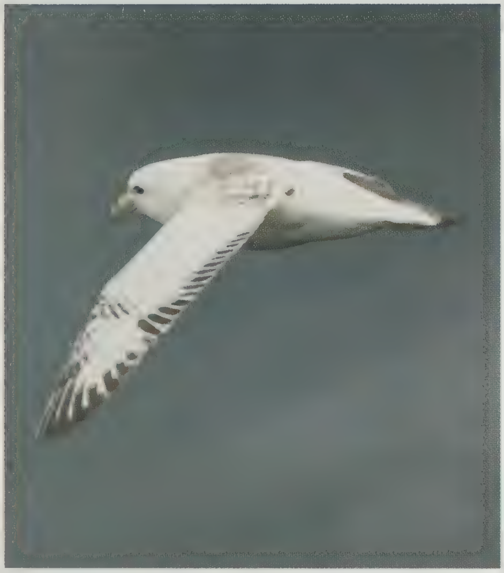
D *Mid bluish-grey* overall; breast usually paler but not whitish.

DD *Dark bluish-grey* overall; breast sometimes paler.

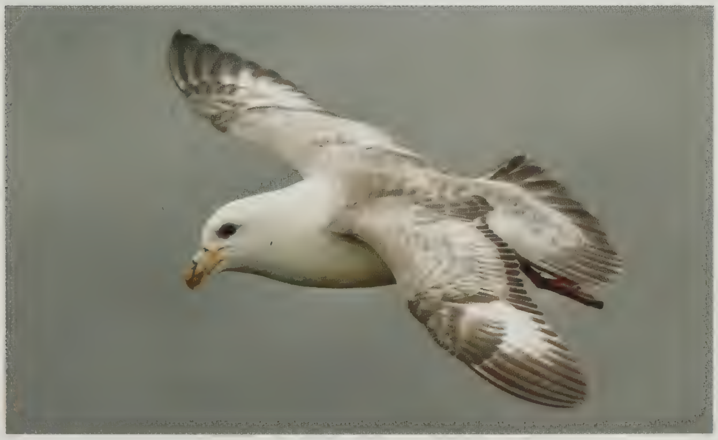
DDD *Dark greyish-brown* to *blackish-brown* overall; breast sometimes paler.

Box 1 and Appendix 1) and Fisher (1952) recommended four morph categories: double light (LL), light (L), dark (D) and double dark (DD). To these four, Garner (2008) added triple light (LLL) and triple dark (DDD). Fisher's categories have been widely applied in field studies of geographical distribution of morphs (e.g. Drury & Drury 1959, Pennycuick & Webbe 1959, Pashby & Cudworth 1969, van Franeker & Wattel 1982, Camphuysen 1993, Camphuysen *et al.* 1995, Falk & Møller 1995a, van Franeker & Luttik 2008).

There are problems with these morph categories, in terms of the variation within them and drawing a line between them (Appendix 1), but they offer broad guidelines that facilitate research and help to communicate findings. For example, studies have found that extremes in morph in Pacific Fulmar are greater than in Atlantic Fulmar: the lightest light-morph Pacific is paler than the lightest Atlantic Fulmar, and the darkest dark morph is darker (e.g. Hatch & Nettleship 1998). Atlantic birds range from LL to DD (plates 188–191), whereas Pacific birds range from LLL to DDD (plates 192–197). Furthermore, plates 188–191 and 193–196 show that, while LL–DD morphs of the two subspecies are very


Chris Collins

192. LLL Pacific Fulmar, Sea of Okhotsk, 19th June 2014.


Kirk Zufelt

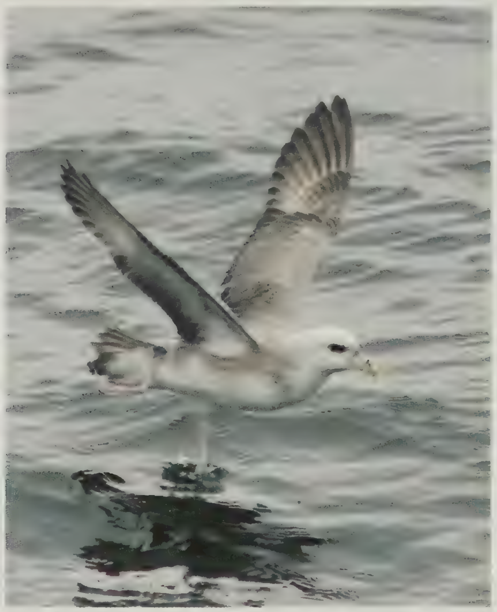
193. LL Pacific Fulmar, California, USA, 9th June 2009.

similar, separation of typical birds is possible. Key differences are found in the contrast between tail and uppertail-coverts, bill size and structure, and typical bill colours (more detail is given in the captions to plates 188–197).

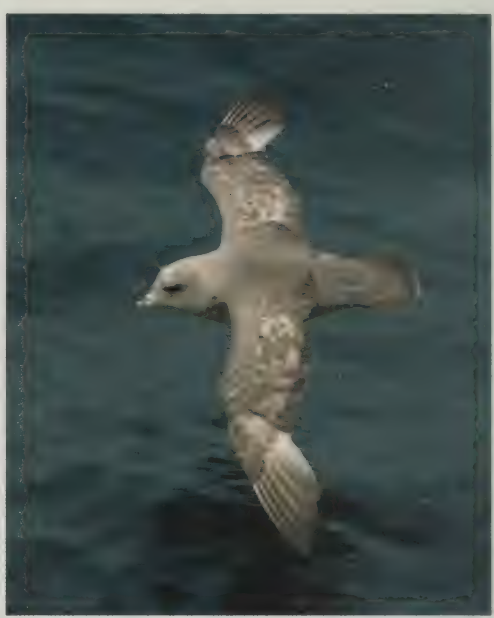
Unfamiliar plumage types

Over the last 12 years or so we became aware of three unfamiliar plumage types of Fulmars in the North Atlantic, all three of which bear some resemblance to Pacific Fulmar:

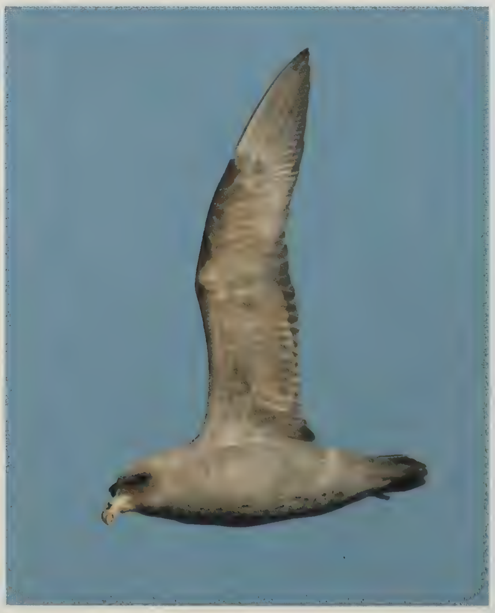
1. An *extra-pale* Fulmar seen during a pelagic trip off Scilly in April 2003 resembled a LLL Pacific Fulmar (Flood *et al.* 2007). A few years later, extra-pale Fulmars seen during a seawatch off


Brian Sullivan

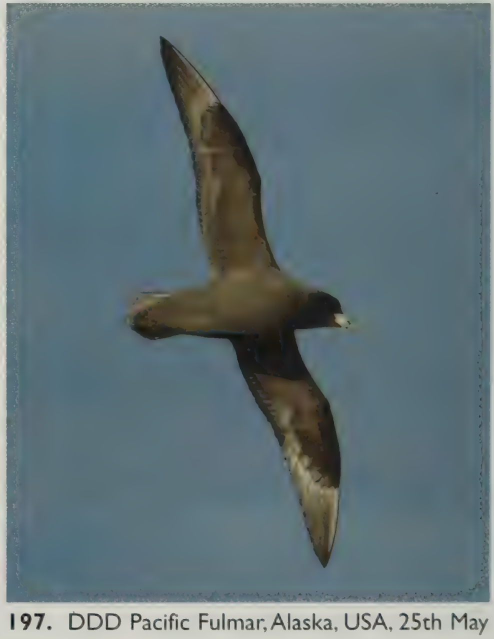
194. L Pacific Fulmar, California, USA, 14th October 2007.


Brent Stephenson

195. D Pacific Fulmar, Alaska, USA, 4th August 2007.


Brian Sullivan

196. DD Pacific Fulmar, California, USA, 19th January 2008.


John Puschock

197. DDD Pacific Fulmar, Alaska, USA, 25th May 2013.

Co. Mayo raised the same possibility of being Pacific birds (Garner 2008).

2. An *extra-dark* Fulmar photographed 130 km south of Fastnet in February 2009 suggested a DDD Pacific Fulmar (R. McLaughlin *in litt.*).

3. During a trip to Spitsbergen in June 2014, RLF noted that about 5% of Fulmars had a *dark distal tail-band*, covering up to 20% of the length of the tail. This plumage characteristic has not previously been reported in Atlantic Fulmars, while a contrastingly dark tail or broad dark distal tail-band is typical of most Pacific Fulmars.

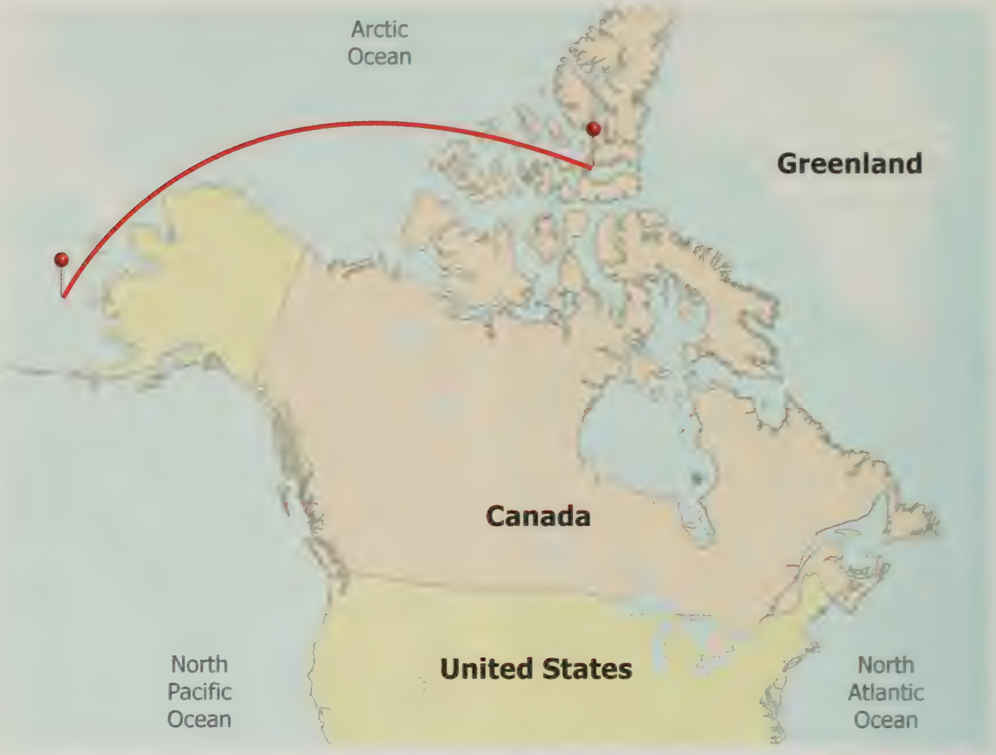
The vagrancy potential of Pacific Fulmar

In the light of these unfamiliar plumage types resembling Pacific Fulmar, what is the possibility of that subspecies reaching the North Atlantic at the present time? The closest breeding colonies of Pacific Fulmar to the North Atlantic are light-morph birds on St Matthew and Hall Islands, in the north Bering Sea (60°30'N 172°45'W; population estimate 450,000 birds, Hatch & Nettleship 1998). A journey of 3,500 km through the Bering Strait, across the Chukchi Sea and the Beaufort Sea would bring them to Atlantic Fulmar colonies on Devon Island, in the Canadian Arctic (76°14'N 89°12'W; population estimate 50,000 birds, Hatch & Nettleship 1998) (fig. 1). Light-morph Pacific Fulmars predominate in high latitudes of the Pacific (the reverse of the situation in the Atlantic) so a vagrant would most likely be a light morph. Navigating the oceanic Arctic flyway presumably becomes more likely as global warming causes the summer ice cap to shrink.

There is evidence that vagrant seabirds have used this flyway, most notably with regard to certain North Pacific alcids which have occurred in the North Atlantic. These include an Ancient Murrelet *Synthliboramphus antiquus* off Lundy, Devon, in 1990–92 (Waldon 1994), a Long-billed Murrelet *Brachyramphus perdix* at Dawlish, Devon, in 2006 (Rylands 2008) and Tufted Puffins *Fratercula cirrhata* in southwest Sweden in 1994 (Haraldsson 1995) and on the Swale, Kent, in 2009 (Wright 2011). Meanwhile, from the Atlantic, Manx Shearwaters *Puffinus puffinus* appear to be colonising the northeast Pacific (Howell 2012), while a Northern Gannet *Morus bassanus* was found in the Farallon Islands, California, in 2012 (blog.aba.org).

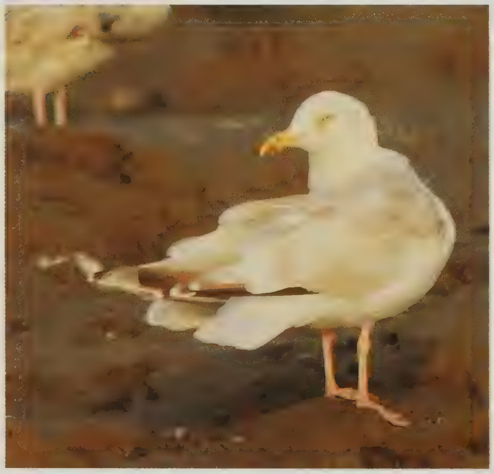
Satellite tracking of Atlantic Fulmars shows them moving a cumulative distance of over 1,600 km in just two weeks (Falk & Møller 1995b), while an Atlantic Fulmar breeding on the Scottish coast travelled over 6,000 km in under 15 days while incubation foraging (Edwards *et al.* 2013). Purely in terms of distance, therefore, passage via the Arctic flyway is entirely feasible for a Pacific Fulmar. This flyway may have played a part in the Fulmar's evolution. There are several theories (Voous 1949; Howard 1969, 1984;

Plates 188–197. The morphs of Atlantic *Fulmarus g. glacialis* and Pacific Fulmars *F. g. rodgersii*. The extremes in morph are greater in Pacific Fulmar (lighter light morph, darker dark morph). The randomly distributed dark markings were observed on a number of Atlantic Fulmars in Spitsbergen in June, and several Pacific Fulmars off California in September. A number of field marks separate Atlantic from Pacific Fulmar. Contrast between tail and uppertail-coverts is normally lacking in Atlantic (but see main text for Atlantic Fulmars with a dark distal tail-band), whereas the tail is normally much darker than the uppertail-coverts in Pacific Fulmar. In Pacific, the visible tail is either wholly or mainly dark, in the latter case appearing as a broad distal tail-band (plates 193 & 195). The contrast is less obvious in darker morphs. Bill size and structure – the bill of Atlantic Fulmar is fairly large, heavy, and blunt-ended, especially in boreal populations, whereas the bill of Pacific is relatively long, slender, and less blunt-ended (although the bill is more robust on males than females in both subspecies). Typical bill colours of Atlantic range from largely bluish-grey or pinkish and yellowish (plate 188) to these same base colours but with extensive dark markings (plate 190). In Pacific, the bill is typically plainer and ranges from pinkish- or greenish-grey with a yellowish tip (plate 194) to yellowish with a more orange tip (plate 193) and a variable dark band at the base of the ungues (the plates that cover the bill tip). Our study found that the colour of the nasal tubes is important. On many Atlantic Fulmars the nasal tubes are dark, especially on intermediate and dark morphs (plates 189–191) while they are rarely if ever dark on any morph of Pacific (plates 192–197).

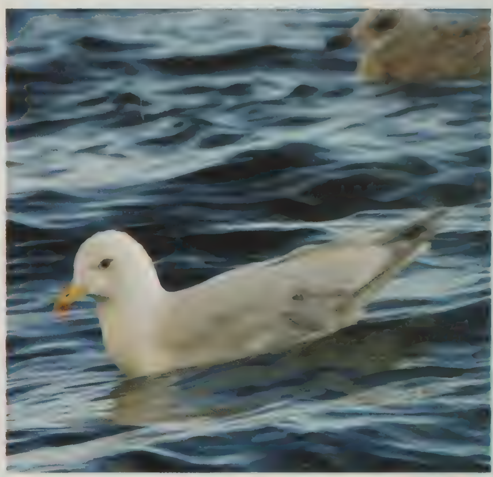


© Ashley Fisher

Fig. 1. The Arctic flyway, between the North Pacific and the North Atlantic. The red line shows the shortest route (c. 3,500 km) between the closest colonies of Pacific Fulmars, on St Matthew and Hall Islands, in the north Bering Sea, and Atlantic Fulmars on Devon Island, in the Canadian Arctic. This is the most likely route for a Pacific Fulmar to reach the North Atlantic.



Hans Henrik Larsen



Peter Nielsen

198 & 199. Aberrant Herring Gulls *Larus argentatus*; Hirtshals Østhavn, Denmark, 4th November 2012 (left) and Århus Centralhavn, Denmark, 12th December 2010. These plates provide a helpful comparison between qualitative aberration that results in a change of colour (198), and quantitative aberration that results in a lighter shade of the given colour (199). In plate 198 this is the result of the brown mutation (qualitative). Parts of the primaries which are normally black appear brown, while normally grey areas are in part cream-coloured (e.g. mantle and upperwings). However, the strong bleaching effect is already visible; the most exposed parts of the brown regions of the primaries are paler, and some scapulars and upperwing-coverts (presumably older ones) are much paler than others. In plate 199 the plumage aspect is the result of dilution, where pigment is diluted to the same degree over the entire plumage (quantitative). As a result, normally black areas are mid grey, mid-grey areas are light grey, and light-grey areas are whitish.

Box 2. Terminology and explanations for colour aberrations in birds used in this paper. See van Grouw (2013) for a fuller discussion.

Melanins are pigments responsible for many colours that we see in feathers and bare parts. *Eumelanin* is the most common type and, depending on concentration and distribution, gives black, grey and dark brown. *Phaeomelanin* in high concentration gives reddish-brown, in low concentration yellowish-brown. However, Fulmars have only eumelanin.

Albinism is absence of melanin pigment in the feathers, skin and eyes, giving all-white plumage, pink feet and bill, and red eyes. (A bird is either albino or not albino, and never partial albino.) Albinism causes poor eyesight, so wild albino birds rarely survive for long and are rarely encountered. Note that albino is frequently incorrectly ascribed to birds with aberrant white feathers.

Qualitative melanin reduction is incomplete melanin synthesis *resulting in a colour change* (e.g. feathers which are normally black are brown or cream-coloured). It is more common than quantitative melanin reduction. Two types feature in this article. **Ino** is a weak to strong qualitative reduction of both melanins – black in normal feathers is light brown in the dark form of ino and cream in the light form; birds have pink feet and bill (and pinkish eyes in the light form). **Brown** is a qualitative reduction of eumelanin – black in normal feathers is brown, with feet, bill and eyes unaffected. This is one of the most common colour aberrations.

Quantitative melanin reduction is a reduction in the number or size of melanin granules, otherwise known as **dilution**, *resulting in a lighter shade of the given colour* (e.g. black in normal feathers is mid grey, mid grey is light grey, light grey is whitish), with feet, bill and eyes unaffected (e.g. plate 199). Less common than qualitative melanin reductions.

Bleaching A secondary effect of aberrant pigmentation, especially qualitative reduction, is that colours bleach unusually quickly. Feathers become almost white (e.g. plate 210). The type of aberration involved is then very difficult to distinguish because colour clues are lost.

Grizzle is an aberration in which each feather contains a mixture of feather barbs which are white, and others which are normally coloured. After each moult, the number of white barbs increases, until the bird becomes almost completely white.

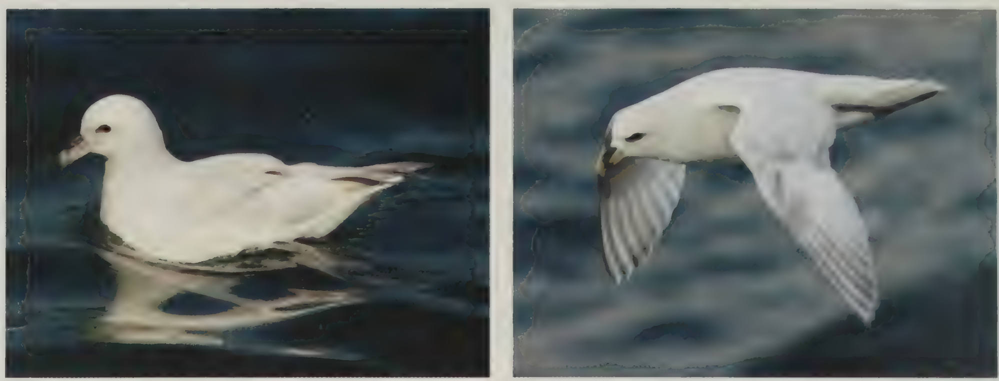
Kerr & Dove 2013), but the simplest is that Fulmars from the North Pacific arrived in the North Atlantic during interglacials and became geographically isolated during subsequent glacial periods. An alternative theory, based on present-day distribution, invokes an Atlantic origin for the Fulmar and subsequent passage through the Arctic flyway into the North Pacific.

Other causes of unfamiliar plumage types

In addition to vagrancy of Pacific Fulmar, there are two further potential explanations for records of unfamiliar plumage types: aberrant or variant Atlantic Fulmars, or hitherto unrecognised morphs of Atlantic Fulmar. We investigated these records by researching the literature, studying museum skins, gathering field records and analysing photographs. Our combined knowledge of field identification, moult and colour aberrations in birds (genetics) was crucial in getting to grips with the results of our investigation.

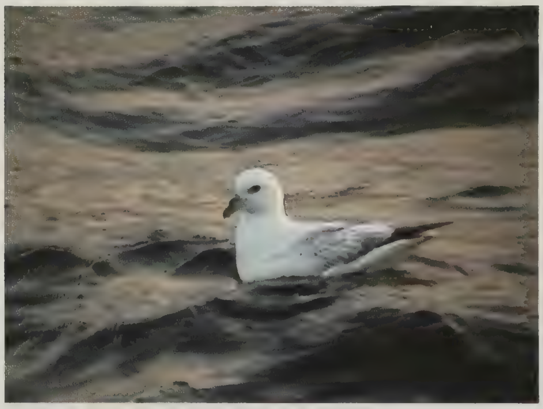
Extra-pale Fulmars

We found that extra-pale Fulmars are rare in the North Atlantic. We reviewed all records to assess whether they offered examples of one or more of the following: aberrant/variant Atlantic Fulmar, hitherto unrecorded LLL Atlantic Fulmar or vagrant LLL Pacific Fulmar. We now know that most, if not all, reported albino Fulmars are in fact not albino (see Box 2) and we can assume that in the great majority of cases these birds are either genuine LLL or represent inherited aberrations other than albino. We report claimed albinos with this caveat.


Ómar Runólfsson

Eirik Grønningsæter

200 & 201. Aberrant L or D Atlantic Fulmars; Sandgerði, Iceland, 1st June 2009 (left); Norway, 11th September 2009 (right). The base colour, or pigmentation, of the remiges hardly differs among the four morph categories of Atlantic Fulmar; in other words LL and DD Fulmars have similarly coloured dark grey remiges, though there is variation in the extent and contrast of the pale patch at the base of the inner primaries and the primary greater coverts. The light grey of the primaries of the two birds in these photos thus indicates a quantitative pigment reduction, or dilution – which results in a lighter shade of grey. Many different mutations are known that cause quantitative reduction. Some are easy to recognise, others result in pigment reductions (as for these Fulmars) that are so similar that they are hard to distinguish. As here, dilution mutations generally do not affect the bare parts. Normally, dilution mutations affect pigment to the same degree over the entire plumage (e.g. dark grey becomes mid grey, mid grey becomes light grey, etc.). Based on the difference in depth of colour between the remiges (light grey) and the mantle (whitish), we suspect that these Fulmars are both genetically L or D.


Robert Flood

202. This aberrant Atlantic Fulmar (Scilly, 24th April 2003) illustrates the effect of grizzle or some form of dilution. This bird appears most convincingly like a LLL Fulmar, with scapulars and upperwing-coverts unusually pale, yet the remiges are dark grey, like a typical Fulmar. Grey and black colours in feathers are the result of eumelanin and different arrangements of these pigment granules reflect light differently, giving a range of colours – black when arranged in an equally spread fashion, grey when clumped, while in-between arrangements give shades of grey. Most mutations affect a pigment equally over the entire plumage, but at least two mutations affect pigment arrangements one way in one area of the plumage but another way in another area, as for this Fulmar. One mutation is called grizzle, the other is a form of dilution; without handling the bird it is difficult to judge which is involved in this case.

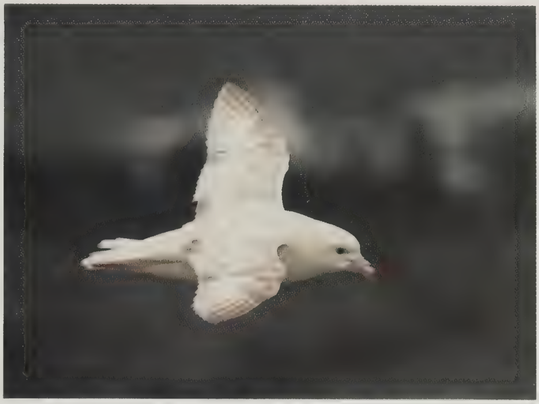
Pre-1950 records

Fisher (1952) collated reports of 'extra pale' Fulmars, which included several British records, all from St Kilda, in the Outer Hebrides. Such 'entirely white' birds were noted by N. MacKenzie, who lived on the island from 1829 to 1843. R. Wilson exhibited an albino from St Kilda at the Glasgow Natural History Society in 1905, while William Eagle Clarke made reference to an albino, collected from St Kilda in 1910, in the Royal Scottish Museum. E. Baxter and L. Rintoul described a bird taken from St Kilda in 1919 with a 'dull crimson bill and horn-coloured tip' and 'delicate-pink feet'. C. J. Carroll claimed an albino (pink eyes, legs and feet) obtained in 1908 (probably Britain). Fisher (1952) saw four birds on St Kilda in 1939 with white backs and mantles, but pigmented eyes, and one or two more on subsequent visits.

The specimen Clarke referred to remains in the National Museums Scotland and close examination of the down layer, especially on the back and mantle, shows remaining pigment of a brownish tone. This, combined with a bill lacking pigment, confirms that it is an aberrant bleached ino (NMS-Z.1910.192: St Kilda, August 1910). The 'white' birds from St Kilda seen by Baxter, Rintoul and Fisher were, according to their descriptions, very likely dark ino (i.e. pigmented eyes, but bill and feet not pigmented). It seems that the ino gene was/is not uncommon in the St Kilda population.

For other regions, Fisher (1952) noted Andersen's report of a white bird in the Faroe Islands with 'no trace of grey on the back feathers; even the beak was white', while Snouckaert van Schauburg claimed an albino in Iceland in 1908. (The latter is currently in the Netherlands Biodiversity Centre Naturalis, Leiden, and is a bleached brown; plate 207.) In Norway, A. Nathorst saw a completely white bird on Jan Mayen in 1899, while L. Münsterhjelm claimed an albino in 1910 near Bear Island, and G. Bertram and D. Lack saw two birds in 1932 'almost completely white on back and wings'. In Greenland, A. Bertelsen recorded two white birds. On Spitsbergen, Count Zeil killed a white bird in 1870 – 'shiny like silk' with typical-coloured bare parts, O. le Roi saw a bird that was 'quite white' and A. Koenig shot one in 1908 that was pure white. (The specimen of Koenig's bird is in the Alexander Koenig Museum, in Germany, and is a bleached brown; plate 204.)

In addition to Fisher's review, Koenig (1911) mentioned white specimens present in Cambridge Museum and in the Natural History Museum at Tring (NHM Tring). The Tring specimen is still held in the American Museum of Natural History (AMNH) in New York and the bird, a female, is a bleached brown (AMNH 527166: Mull, Argyll, June 1902). Koenig also referred to a white specimen pictured in *A Monograph of the Petrels* (Godman 1907–10). This specimen, collected in the Greenland Sea in 1893, is held at NHM Tring and is a bleached brown (plate 205).

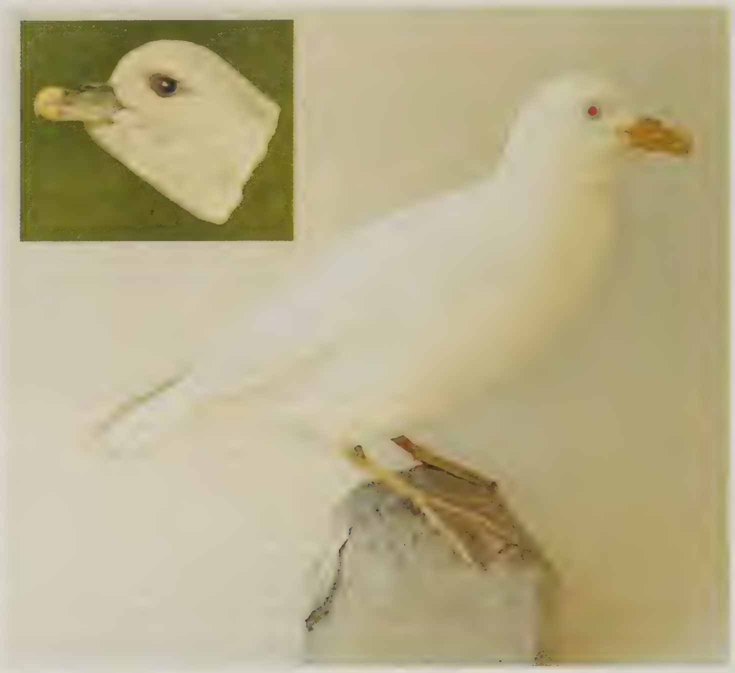


Eirik Grønningsæter

203. Aberrant D or DD Atlantic Fulmar, Norway, 4th September 2010. The brownish tone visible in some feathers indicates a *qualitative pigment reduction*. The two most likely candidates are ino and brown. Different mutations from the ino gene (alleles – two or more alternative forms of a gene that arise by mutation) are known to occur in many species, indicating that the ino gene mutates easily (which does not mean that it is more likely to occur than the brown mutation). Depending on the allele, the degree of melanin synthesis differs, and in the darker forms of ino the result can appear similar to that from brown. However, in brown the pigmentation of the bare parts (notably the feet and bill) is scarcely affected, while in any form of ino the bare parts show little visible melanin (van Grouw 2013). The pink bill and feet of this individual thus indicate an ino mutation. Based on the remaining colour, this ino Fulmar is genetically D or even DD. The patchiness is simply due to bleaching, where older feathers are more bleached. Feathers affected by qualitative pigment reduction bleach quickly and completely; assuming that this individual survived, it would have been almost white just a couple of months later.

Modern field records

There is no modern equivalent of Fisher's review and relatively few extra-pale Fulmars are documented in the post-1950s literature. Not many seabirders that we contacted record the plumage details of unusual Fulmars. However, two sets of records reveal the frequency of occurrence of extra-pale birds along the east coast of England. Brett Richards has seawatched throughout the year at Flamborough, Yorkshire, from 1987 to date. In that time he observed three extra-pale birds. Kevin Shepherd has seawatched regularly from Sheringham, Norfolk, in about 20 years since 1975, during which time he observed four extra-pale birds. The descriptions of the Fulmars' plumage from the two observers indicate aberrant birds. Of particular note, one seen by KS bred successfully in a small colony at Sheringham during 1988–90 (fledglings were typical LL). The breeding adult was very pale overall, indicating strong bleaching. Since qualitative pigment reductions are more common than



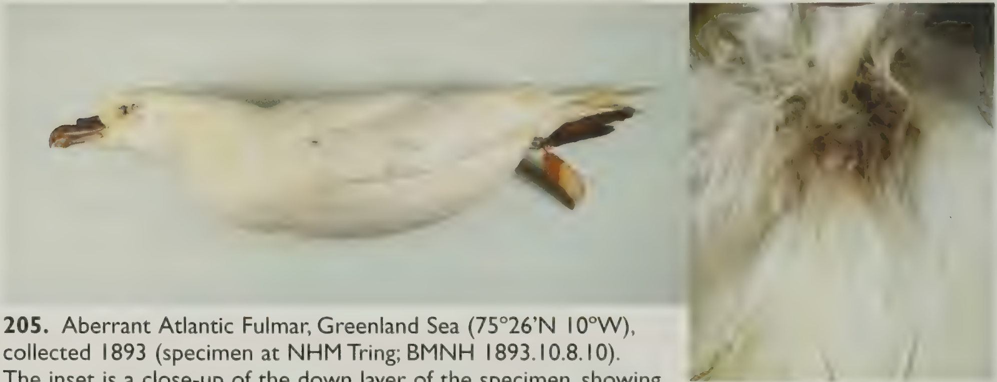
Till Töpfer, ZFMK

204. Aberrant Atlantic Fulmar, Sicherheits-Hafen, Spitsbergen, collected 17th June 1908 (specimen at Alexander Koenig Museum, Bonn; ZFMK 4031; female). This mounted specimen has been on public display for about 100 years and so both plumage and bill are completely bleached, suggesting an albino. The red glass eyes chosen by the taxidermist confuse matters further. However, an illustration of the same individual when living (inset), from Koenig (1911), clearly shows a *blackish* eye colour, while the down layer still shows signs of pale brownish melanin, indicating that the bird's original appearance was the result of a qualitative melanin reduction. The pigmentation in the bill indicates that this Fulmar is affected by brown rather than ino mutation.

quantitative reductions, and the former bleach more quickly and more completely, it seems likely that the bird was aberrant ino or brown rather than diluted. The sex of the breeder was not noted (the sex of a bird is a strong pointer to whether it is aberrant or not, since both ino and brown are recessive sex-linked in inheritance; in the wild, almost all ino and brown individuals are females).

Other museum specimens

We uncovered a number of 'white' Fulmar specimens in museum collections that were not recorded in the literature. For example, the National Natural History Museum in Copenhagen, Denmark, holds three 'white' Fulmars from Greenland (ZMUC 52.884: Umanak, Greenland, 1872; ZMUC 52.885: Umanak, Greenland, June 1885; and ZMUC 52.917: Egedesminde, Greenland, 1899). Although the specimens *look* white overall, all three show melanin pigmentation in their down. In other words, we have the effect of an inherited pigment



Hein van Grouw

205. Aberrant Atlantic Fulmar, Greenland Sea (75°26'N 10°W), collected 1893 (specimen at NHM Tring; BMNH 1893.10.8.10). The inset is a close-up of the down layer of the specimen, showing brownish pigmentation. Although this was described and depicted as a 'white Fulmar' by Godman (1907–10), brownish pigmentation in some feathers that were less affected by the light, such as underwing-coverts and down, together with melanin in the bill, tells us that the aberrant whitish plumage of this bird is the result of brown mutation and further bleaching by light.

aberration combined with bleaching. The bill pigmentation of specimens 52.884 and 52.917 appears unaffected and the remaining melanin in the down layer has a grey rather than brown tone, together indicating quantitative melanin reduction resulting in some form of dilution. The down of specimen 52.885, on the other hand, shows some brown and cream colours, and the bill lacks visible pigment, together indicating a qualitative melanin reduction, most likely ino.

Another 'white' specimen, in the Faroese Museum of Natural History in Thorshavn (museum no. 7), was collected locally on 22nd March 1948. The brownish-grey down layer, in combination with a pigmented bill, indicates a bleached brown bird. Moreover, every year in the Faroe Islands, thousands of new fledglings too fat and heavy to fly are caught just offshore, and almost every year some are found to have an aberration, typically dilution, ino or brown (Jens-Kjeld Jensen *in litt.*).

Case studies

Unfortunately, we will never know the actual condition of most of the extra-pale Fulmars mentioned above, which lack detailed descriptions, photographs or specimens. It is impossible to be certain whether the birds had aberrant plumage, which we suspect, or whether they were genuine LLL, Atlantic or Pacific. However, we explored these possibilities by examining museum skins and photographs of live birds, and the captions to plates 200–207 summarise our key findings.

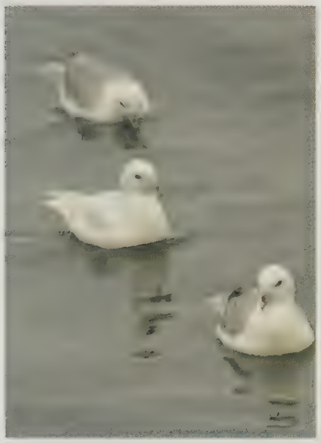
To recap, we failed to find irrefutable evidence of LLL Fulmars in the North Atlantic. All 12 of the extra-pale museum skins and photographed live birds that we examined were aberrant Atlantic Fulmars with inherited melanin reduction – dilution (4), grizzle or some form of dilution (1), ino (2), and brown (5) – with the extra-pale appearance often exaggerated by rapid bleaching of aberrant feathers.

Extra-dark Fulmars

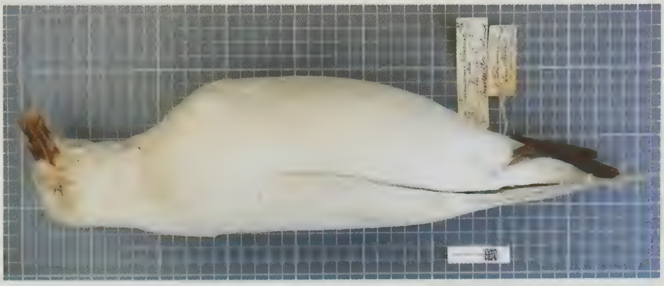
We found that extra-dark Fulmars – which could be aberrant or variant, hitherto unrecorded DDD Atlantic Fulmar or vagrant DDD Pacific Fulmar – are extremely rare in the North Atlantic.

Field records

Fisher (1952) noted V. C. Wynne-Edwards' 1950 report from Cape Searle, Canada, of a high proportion of 'really dark' Fulmars, as dark as a Sooty Shearwater *Puffinus griseus*. It is highly improbable, however, that a large proportion of Fulmars seen would be DDD. In February 2014, RLF saw a particularly dark Fulmar off Scilly, but it appeared dark bluish-grey, not dark greyish- or blackish-brown like a DDD Pacific Fulmar. Garner (2008) mentioned an extra-dark bird off Killybegs, Co. Donegal, in February 1998, while records of DD Fulmars from Whitburn, Co. Durham, include an 'impressive chocolate-brown bird' in January 2013 that



Skarphéðinn G. Þórisson

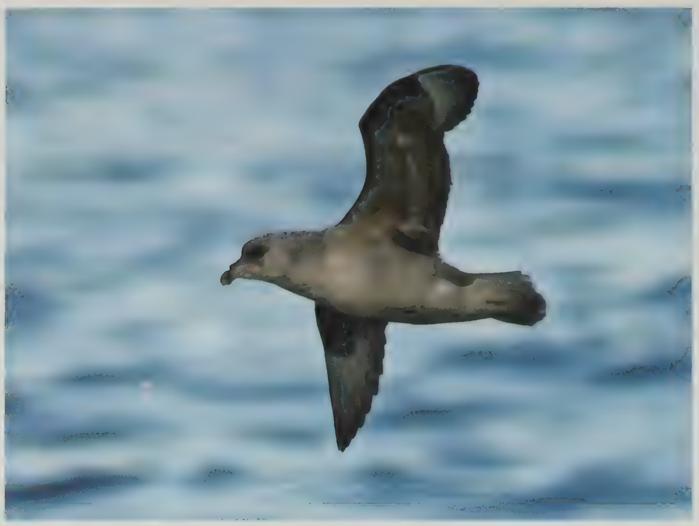


Pepijn Kaminga

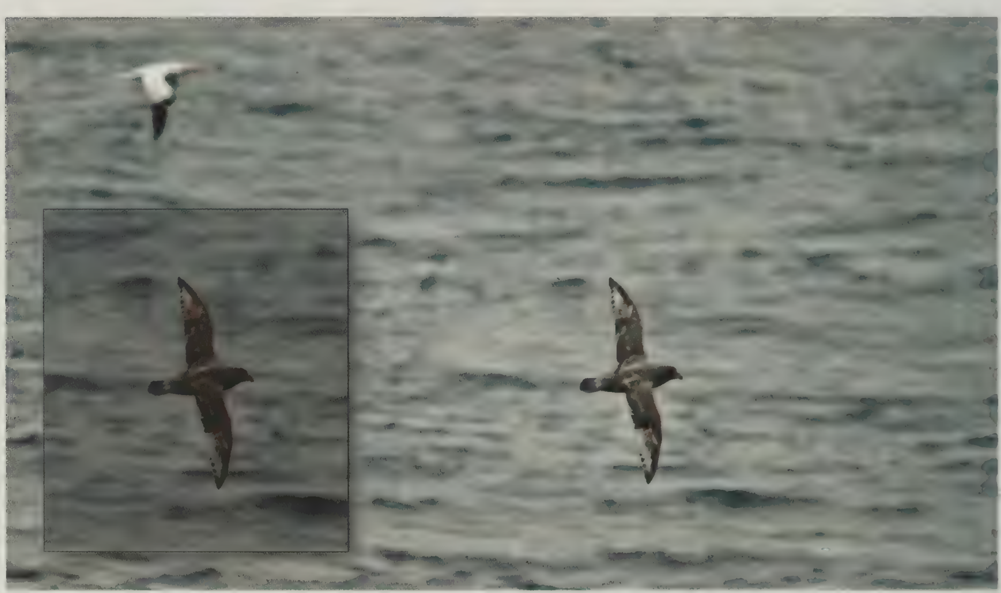
206 & 207. Aberrant Atlantic Fulmars, Borgarfjörður Eystri, Iceland, 3rd June 2004 (left); Iceland, collected 14th May 1908 (specimen at the Netherlands Biodiversity Centre Naturalis, Leiden; RMNH 187193; female). The specimen, although appearing wholly white and superficially like an albino (as it was originally thought to be), has a brownish down layer, vestiges of brown in a number of feathers, and a pigmented bill, which indicate that it is a bleached brown. Similarly, the pigmented bill and some pale brownish-coloured feathers on the wings and back (fresh, not yet bleached) show that the individual in plate 206 is also a bleached brown.

could have been DDD (S. G. Addinall, P. Hindess, M. Newsome *in litt.*).

In addition, we received photographs of six particularly dark Fulmars, of which plate 208 shows an example. None of the six qualify as DDD in our opinion. In all cases, the plumage aspect appears dark bluish-grey (although some showed brownish tones that were probably due to bleaching of old feathers) and typical of DD birds rather than the dark brownish- or blackish-grey of DDD Pacific Fulmars. Of note, five of these DD Atlantic Fulmars were photographed during January–

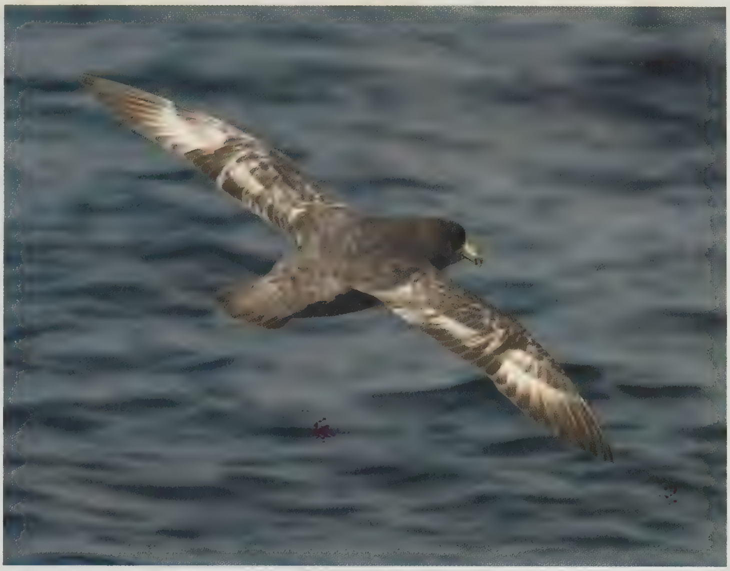

Ingvar A. Sigurðsson

208. DD Atlantic Fulmar, Heimaey, Iceland, 1st March 2014. In recent winters, Ingvar Sigurðsson has encountered a few apparently extra-dark Fulmars off Heimaey. This is a typical example. It is dark, but the colour is dark bluish-grey (rather than dark greyish- or blackish-brown, as a DDD Pacific Fulmar), while the bill is fairly large, heavy, and blunt-ended and the nasal tubes are dark. These characteristics indicate Atlantic Fulmar.


Rónán McLaughlin

209. Aberrant DD Atlantic Fulmar, 130 km south of Fastnet Rock, off Co. Cork, 24th February 2009. The inset shows the original image, while the main plate is adjusted using the known head colours of the adult Northern Gannet *Morus bassanus* for reference. In the original, the bird appears dark brownish, resembling a DDD Pacific Fulmar. The tail looks rather dark and shows weak contrast with the somewhat paler rump and uppertail-coverts, also suggesting Pacific Fulmar. The strongest clue that this is an Atlantic Fulmar is in the colour and pattern of the bill, in particular the dark nasal tubes. Pacific Fulmars of all morphs rarely, if ever, show dark nasal tubes (e.g. plates 192–197). Furthermore, the bill looks robust and more typical of Atlantic Fulmar, although, depending on viewing angle, the bill of Pacific can appear robust. The adjusted image reveals a bird less brownish than the original, while the head and neck feathers look convincingly dark bluish-grey as for a typical DD Atlantic Fulmar. The explanation that best fits the evidence is that this is a DD Atlantic Fulmar suffering from food deficiency (see text).

April off Iceland, Norway or England, indicating winter movement of high-Arctic dark morphs to lower latitudes.

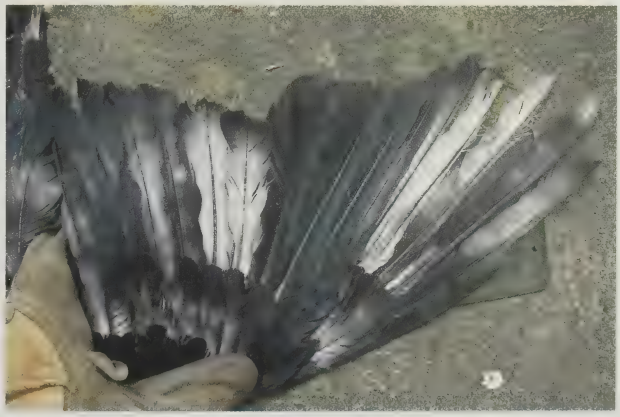

John Puschock

210. DD or DDD Pacific Fulmar, Alaska, USA, 31st May 2010. This bird shows dark plumage superficially similar to the Fastnet Fulmar in plate 209. However, some dark-morph Pacific Fulmars, like this one, become strongly bleached toward the end of the moult cycle, and show patchy upperwings with strongly bleached greater coverts. The primaries look healthy though – none are short and the whitish at the base of the inner primaries is typical. This bird's appearance is the result of a mix of strongly bleached older feathers and fresher, dark feathers, not food deficiency.

The Fastnet Fulmar

An extra-dark Fulmar was photographed south of Fastnet Rock, off Co. Cork, in February 2009 (plate 209). A subsequent internet-based discussion of the images included an opinion that it was a Pacific Fulmar. Dark-morph Pacific Fulmars can show a somewhat similar colour and upperwing pattern (plate 210), but our conclusion is that the Fastnet Fulmar was an Atlantic Fulmar (see caption to plate 209).

The widespread lack of pigmentation, mainly in the feather bases, indicates a dietary rather than a genetic deficiency. Such a deficiency stems from insufficient extraction of tyrosine (an amino acid essential to melanin synthesis and pigmentation in feathers) from the bird's food. Compare the pattern in the primaries of the Fulmar with that of a Carrion Crow *Corvus corone* known to be affected by food deficiency during primary moult (van Grouw 2012; plate 211). The lack of pigment in the Fastnet Fulmar's primaries is not uniform, so it did not occur during the juvenile moult, when all primaries would be equally affected, but during a subsequent complete moult. P1–P8 and the respective greater primary coverts – replaced at the same time – are affected by food deficiency, while P9 and P10 (the outermost) are barely affected, presumably having been replaced as feeding conditions improved. Furthermore, P6–P8 are short compared with P9–P10, a malformation known to occur in food deficiency. Other regions of the plumage also show reduced pigment, notably some

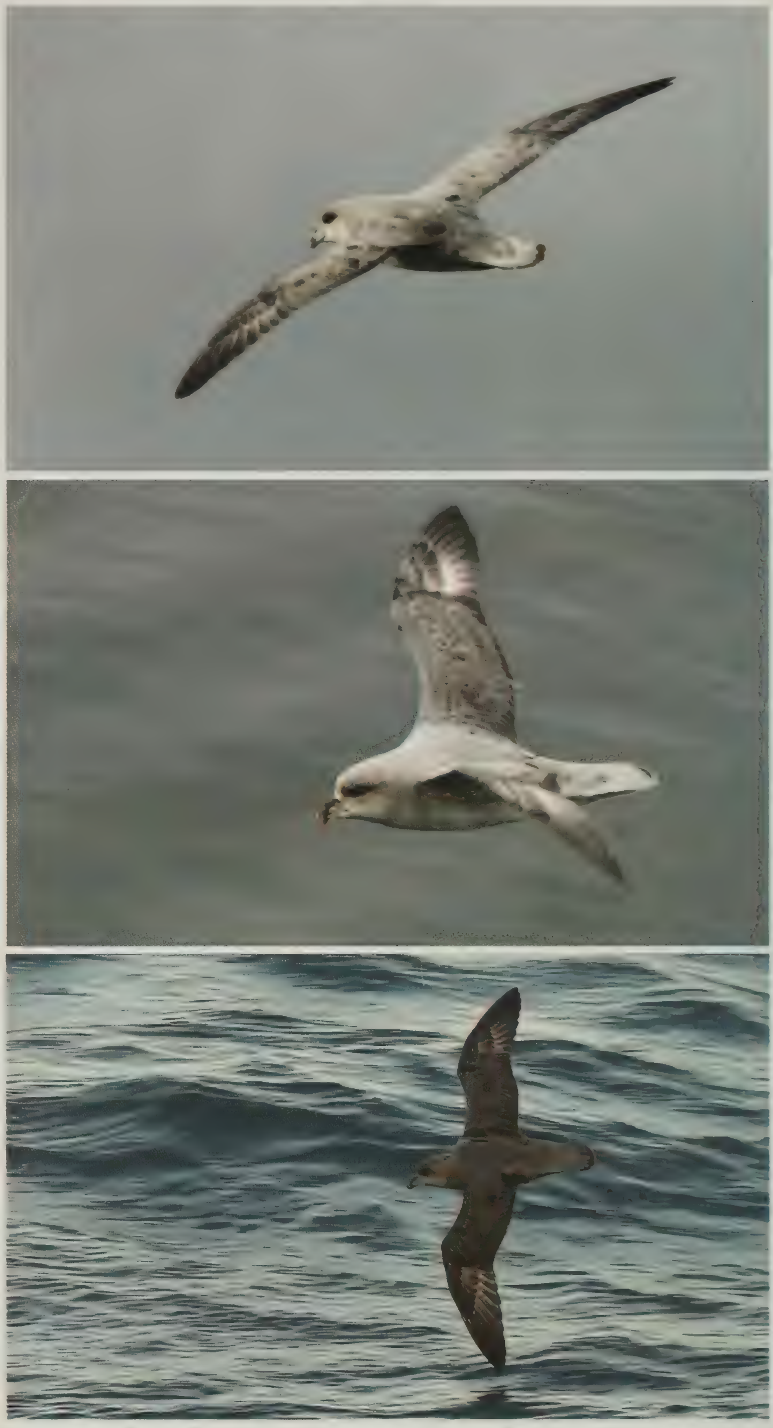

Olivier Poncin

211. Aberrant Carrion Crow *Corvus corone*, Brussels, Belgium, 21st April 2010. This provides a good example of the patchy appearance that can result from food deficiency. During the bird's last wing moult, P1–P3 were unaffected and have normal pigmentation. P4 shows the first signs of food deficiency, while P5–P7 are strongly affected, and extensively whitish (as are S1–S2, which are shorter than normal). The problem of food deficiency was at least partly overcome, however, since P8–P10 are only weakly affected.

median secondary coverts, scapulars, and uppertail-coverts. The tail feathers are unaffected, which is expected given that tail moult occurs toward the end of or following wing moult (*BWP*).

Another possible explanation is that food deficiency led to suspended moult after replacing P1–P8, and that P9–P10 are full-length feathers from the previous generation. However, this is unlikely because small and indistinct pale areas in P9–P10 indicate mild food deficiency, while these primaries are not obviously old and worn.

In summary, we failed to find irrefutable evidence of DDD Fulmars in the North Atlantic. Fulmars superficially resembling DDD Pacific Fulmar turned out to be moderately bleached DD Atlantic Fulmars. The plumage aspect of the Fastnet Fulmar is the result of food deficiency, and the extra-dark appearance of the original photograph is at least partly due to photographic effects.


Peter Dunn

Peter Dunn

Marc Fasol

212–214. Atlantic Fulmars, Spitsbergen, Svalbard, July 2014 (first two show a light morph, the third D/DD). These photos illustrate the variation in dark distal tail-bands discovered in Spitsbergen Fulmars. The bird in the top photo shows a distinct, complete dark tail-band, about 20% of the length of the tail, while the other two show distinct but incomplete bands. Fulmars with dark distal tail-bands often have dark blotches in the rest of the plumage, which is apparent in these photos; note also the dark nasal tubes, typical of most L–DD Atlantic Fulmars.

Fulmars with a dark distal tail-band

The Spitsbergen population

In Isfjorden, Spitsbergen, in June 2014, RLF observed and videoed a Fulmar with an obvious dark distal tail-band, covering about 20% of the length of the tail. Several more L and D Fulmars with similar tail-bands were subsequently videoed by RLF and photographed by Marc Guyt and Peter Dunn. In all, about 5% of the Fulmars had dark distal tail-bands of one sort or another (see plates 212–214 and www.youtube.com/watch?v= Yt863ziMkTw). Morphs ranged from L to D (few LL or DD occur in Spitsbergen). We found that bands may be quite broad (c. 20% of the tail length) or narrow, complete or partial, symmetrical or asymmetrical. In some birds, the distal tail (except the whitish tips) looked indistinctly darker than the basal tail, the relative amounts being variable, which could be considered a variation of a dark distal tail-band.

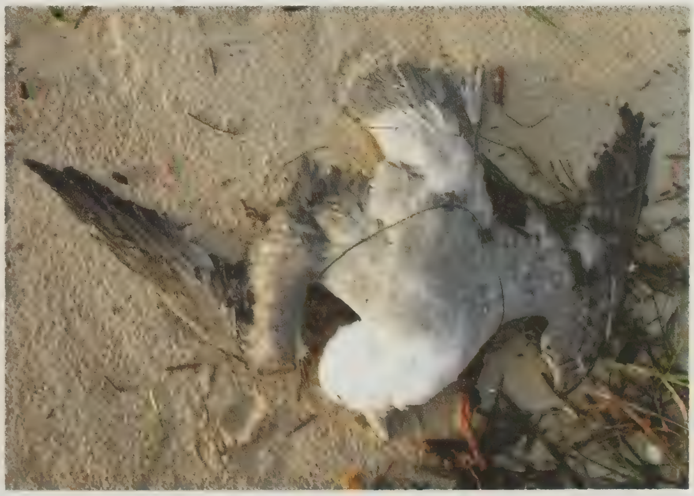
Subsequently, photographs and information of similar birds were solicited through Martin Garner's Birding Frontiers blog (www.birdingfrontiers.com). Photographs taken in Spitsbergen were received from Darryl Spittle (in June 2012) and Alan McBride (in July 2013), while Brett Richards sent us details of a Fulmar with a fairly narrow blackish distal tail-band off Flamborough in January 2009 and another with dark tail corners in March 2012. Hadoram Shirihai reported a census of plumage types across the main Arctic breeding areas in summers 2004–08, during which he noted various types of dark tail-bands on 2–5% of intermediate- and dark-morph Fulmars.

Although a dark distal tail-band is suggestive of Pacific Fulmar (plates 193 & 195), we concluded that the Spitsbergen birds are Atlantic Fulmars. The tail-bands, as far as we have seen, cover at most 20% of the visible tail. Most Pacific Fulmars show a wholly dark tail or occasionally a broad distal band (typically 80% or more of the length of the visible tail) contrasting with paler rump and uppertail-coverts; the contrast is least obvious in darker morphs (Onley & Scofield 2007; Garner 2008; Howell 2012). Furthermore, photographs show the Spitsbergen Fulmars with robust bills and the majority with dark nasal tubes, unlike Pacific Fulmars.

We came up with three possible explanations for dark distal tail-bands in Spitsbergen Fulmars: 1) an ancestral gene from/shared with Pacific Fulmar (i.e. a throwback from the past, supporting the Pacific to Atlantic speciation theory mentioned earlier); 2) a gene recently passed on from Pacific Fulmars through introgression; and 3) aberration in the way pigment granules are distributed (which may or may not be inherited), potentially a morph rather than an aberration given the apparent number of birds carrying the genetic make-up for a dark tail-band. Further research is required to explore these possibilities.

A tideline corpse in Portugal

Magnus Robb drew our attention to a LL Fulmar found on a beach at Praia de Albarquel near Setúbal, Portugal, in January 2009 by António Xeira (plate 215). It had a mid-


António Xeira

215. LL Atlantic Fulmar, Praia de Albarquel, Portugal, January 2009. The visible tail is mid grey with narrow whitish tips, showing clear contrast with the whitish uppertail-coverts and rump, which suggests Pacific Fulmar. However, identification as Atlantic Fulmar was suggested by bill structure and colour, and confirmed by DNA analysis.

grey tail with narrow whitish tips contrasting with whitish uppertail-coverts, and in this respect resembled Pacific Fulmar. Peter de Knijff analysed feathers using mtDNA typing, and found a cytochrome-*b* sequence ruling out Pacific Fulmar and matching Atlantic Fulmar. The robust bill structure and nasal tubes with extensive dark markings were also consistent with Atlantic Fulmar.

Conclusion

All the extra-pale and extra-dark Fulmars that we studied in detail turned out to be Atlantic Fulmars affected by some kind of aberration – dilution, grizzle, ino or brown – or by food deficiency. We suspect that other extra-pale and extra-dark birds that we found reference to, but which had little or no description of their plumage aspect, were also aberrant birds. So, while not entirely solving the puzzle of extra-light and extra-dark Fulmars in the North Atlantic, hard evidence has so far revealed only birds with some form of aberrant plumage, and we found no good evidence of LLL or DDD Fulmars in the Atlantic.

In addition, we discovered that about 5% of Fulmars in Spitsbergen have a dark distal tail-band somewhat like Pacific Fulmar. However, the structure, colour and pattern of the bill, among other features, are characteristic of Atlantic Fulmar. As a result, the criteria for separation of Atlantic and Pacific Fulmars require some modification.

Of course, our work does not rule out the possibility that Pacific Fulmar might occur in the Atlantic. We have made a reasonable case for its vagrancy potential and will certainly remain on the lookout (checking all morphs, not just extra-pale and extra-dark birds).

With questions remaining about the north/south reversal in the morph distribution of Pacific and Atlantic Fulmars, greater extremes in morph in Pacific Fulmar, and yet-to-be explained dark tail-bands in Atlantic Fulmar, we suggest that the 'familiar' Fulmar is in fact veiled by mysteries and puzzles.

Acknowledgments

Robert Dawson and Steve N. G. Howell reviewed the manuscript and provided helpful comments. Jan van Franeker responded to our request for information about unfamiliar Fulmars encountered during his many years studying this species, and provided some comments. Martin Garner gave useful comments and was a source of inspiration. We are grateful to five anonymous reviewers for suggested improvements. Till Töpfer – Alexander Koenig Museum in Bonn, Bob McGowan – National Museums Scotland in Edinburgh, Jan Bolding Kristensen – the National Natural History Museum in Copenhagen, Leivur Janus Hansen – Natural History Museum in Thorshavn, Peter Capainola – American Museum of Natural History in New York, and Pepijn Kaminga – Netherlands Biodiversity Centre Naturalis in Leiden, examined extra-pale specimens of Fulmar held in their bird collections. Christophe Gouraud of Oceanwide Expeditions provided essential support to our study of dark distal tail-bands during and after an expedition cruise off Spitsbergen. Magnus Robb alerted us to the Portuguese LL Fulmar with a mid-grey tail, and Peter de Knijff supplied DNA results undertaken on this bird. Jens-Kjeld Jensen provided information about colour-aberrant specimens seen in the Faroe Islands. Rónán McLaughlin provided the photographs and further information about the Fastnet Fulmar. Mark Darlaston, Wilton Farrelly, Martin Heubeck, Niall Keogh, Mark Newsome, Brett Richards, Stuart Rivers, and Kevin Shepherd helped with information about extra-pale and extra-dark Atlantic Fulmars. Mike Danzenbaker, Steve N. G. Howell, Brian Sullivan, and Kirk Zufelt provided expert opinion about the colour of DD Atlantic Fulmars compared with DDD Pacific Fulmars.

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Robert Flood is an independent seabirder, who jointly rediscovered the presumed-extinct New Zealand Storm-petrel *Fregetta maoriana* and pioneered the well-known Scilly Pelagics. His main interest and ongoing research is into the identification of tubenoses. Major projects include the new-concept multimedia ID guides to North Atlantic seabirds, and a field guide to seabirds of the Atlantic. **Hein van Grouw** has been a Bird Curator since 1997. His main interest and ongoing research is into the occurrence and identification of colour aberrations in birds. This research will, hopefully, result in an internationally recognised nomenclature for colour abnormalities in wild birds that reflects the nature and causes of each abnormality.

Appendix 1. Notes on morphs and genes.

It can be difficult to draw a line between the morph categories introduced in the main text. For example, it is difficult to distinguish LL from L where there is only a hint of light bluish-grey over the crown to hindneck, and to distinguish D from DD where the shade of grey lies between mid and dark bluish-grey. The problem is accentuated by intensity and colour of ambient light. Variation in ambient light influences the apparent shade of grey of feathers. The vagaries of ambient light at sea are well known to experienced seabirders and photographers. For example, Flood & Fisher (2012) included Martin Elliott's illustration of the changing tone of grey in the upperwings of a Fea's Petrel *Pterodroma feae* as it flies past. Assessing 'true' colours in photographs is also problematic. For example, colour can appear to change as intensity of light changes, and due to photographic effects. Accordingly, we made every effort to calibrate colours in photographs used in this article, including using colour-calibration software for computer screens. Furthermore, variation occurs within morph categories (Falk & Møller 1995a). For example, some D Atlantic Fulmars are light bluish-grey on the crown, nape, throat and breast, but have very dark upperwings and back, while others are nearly uniformly light or mid bluish-grey without falling into the DD category.

Much of this paper focuses on aberrant plumages and colour morphs, and the distinction between the two is not exactly clear-cut. Aberrant plumage colours in birds are not uncommon, and aberrant forms sometimes represent a significant portion of the population. In such cases, birds with the aberrant plumage are then considered to be a colour morph and the species is said to be polymorphic. For example, a dark distal tail-band occurs in about 5% of Atlantic Fulmars in Spitsbergen and birds showing this feature could be considered a morph.

Dark morphs are often associated with melanism, which is an increase of melanin above typical levels. However, darker plumages can be the result of other inherited causes (van Grouw & Nolazco 2012). Rearrangement of the same quantity of melanin granules in the feathers can darken the appearance of feathers. An inherited increase of melanin is mainly the result of mutations of the MC1R gene. The role of the MC1R gene is confirmed for many species in which dark morphs occur regularly, for example Snow Goose *Anser caerulescens* and Arctic Skua *Stercorarius parasiticus* (Mundy 2005). Three different morphs are recognised in the Arctic Skua – light, intermediate, and dark – and in this species the MC1R-allele for dark is incompletely dominant over light (alleles are two or more alternative forms of a gene that arise by mutation). If we symbolise dark with ‘A’ and light with ‘a’, then we can assign the following genotypes to the three morphs (phenotypes): dark = AA, intermediate = Aa, and light = aa.

Whether MC1R or another gene plays a role in the Fulmar’s colour morphism is not yet certain (Kerr & Dove 2013), but this is unimportant within the scope of this article. The involvement of three alleles of the responsible gene may be a possible scenario to explain the colour morphs of the Fulmar. If we make this assumption, and also assume that the two ‘darkening’ alleles are partially dominant, then we can symbolise and put them in order of dominance as follows: $A^D > A > a$. With this in mind, LL birds have genotype aa, while DD birds have A^DA^D. Birds with genotype A^Da and Aa may differ slightly in colour but can both be categorised as ‘light’, while A^DA and AA may both fit the characteristics of ‘dark’. This is hypothetical and further research is needed.

Inherited colour aberrations with a ‘bleaching’ effect like brown (Tyrp1), ino (Slc45a2) and the many dilution mutations can occur across the recognised colour morphs of the Fulmar as there appears to be no linkage between any of the responsible genes. If it occurs in a LL bird, then the result may be nearly white plumage. In D and DD birds, the fresh plumage shows more colour, simply because there was more colour in the first place, but nevertheless can appear to be lighter than a normal LL bird, and will readily bleach to white.

Short paper

Predation of Rose-ringed Parakeets by raptors and owls in Inner London

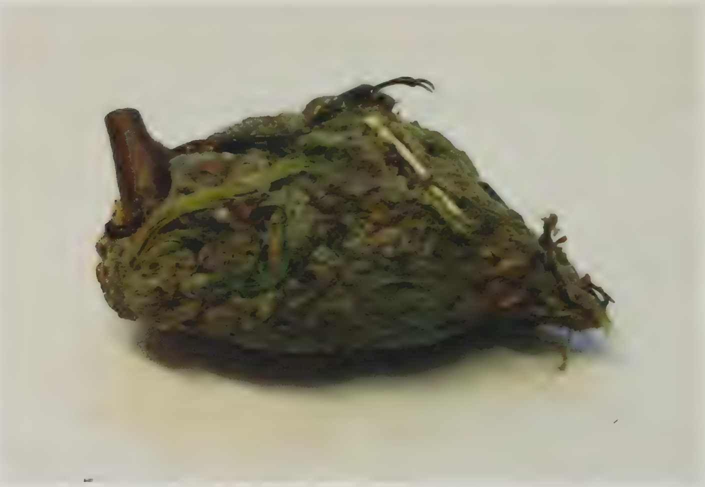
Alan Harris

Abstract Regular observations in central London have revealed that Rose-ringed Parakeets *Psittacula krameri* are being taken by Tawny Owls *Strix aluco* and some raptors, notably Hobby *Falco subbuteo*, Peregrine Falcon *F. peregrinus*, and Eurasian Sparrowhawk *Accipiter nisus*. These observations are described and illustrated here.

The breeding of Rose-ringed Parakeets *Psittacula krameri* in the wild in Britain has a long history, dating back to at least 1855 (Brown & Grice 2005). Yet it was not until the *1968–72 Atlas* (Sharrock 1976) that the presence of a thriving feral population became more widely apparent. The species account in that atlas opened with the comment: 'This attractive, but destructive, African and Indian parrot threatens to become an established feral species', which proved to be prescient. Since then its distribution has increased (*Bird Atlas 2007–11*, Balmer *et al.* 2013) and, while the most recent population estimate is 8,600 pairs (Musgrove *et al.* 2013), Holling *et al.* (2011) suggested that the British population could be as high as 30,000 individuals. Most of these are found in southeast England, especially in the Greater London area, although parakeets may be on the verge of colonising other large cities, such as Birmingham, Liverpool, Manchester and Sheffield.

There is no agreement as to precisely how this species colonised Britain, although Mead (2001) firmly believed that the origins lay in escapes from aviaries. Interestingly, Piotrowski (2003) drew attention to an individual that was observed on the Suffolk coast, having seemingly arrived at Ness Point, Lowestoft, on 23rd October 1990 after crossing the North Sea, while another was seen on the Suffolk coast at Southwold on 25th September 2002 (Wright 2002). In Norfolk, Rose-ringed Parakeets have been recorded at various coastal locations and on one occasion an individual was seen in autumn with a migrating flock of Redwings *Turdus iliacus* and Fieldfares *T. pilaris* (Taylor *et al.* 2001).

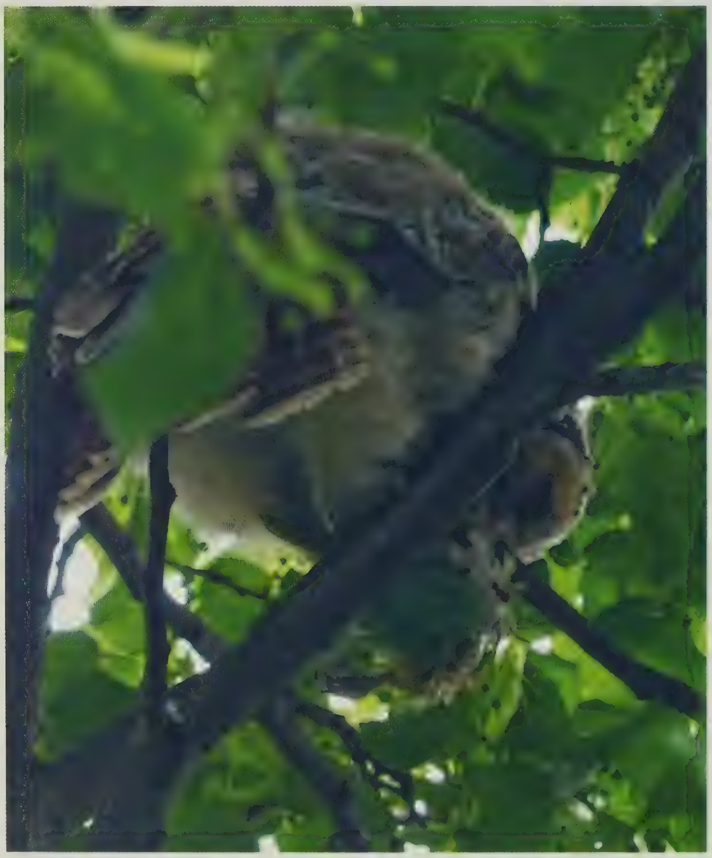
At the time of the *1968–72 Atlas*, many 'were at liberty in various of London's outer suburbs in Surrey, Kent and Essex', together with another nucleus in the Gravesend area of Kent, where a family party was seen at Southfleet in 1969, yet there were no reports of breeding birds in central London (Hudson



Julia Clark

216. Rose-ringed Parakeet *Psittacula krameri* remains in a Tawny Owl *Strix aluco* pellet from the London Royal Parks.

1974; Sharrock 1976). Breeding was first confirmed, in Surrey, in 1971 (Brown & Grice 2005). Now, the British population is clearly centred upon Greater London, with an apparent decline in southern coastal areas; for example, breeding pairs have disappeared from Sussex (Gibbons *et al.* 1993; James 1996). *Bird Atlas 2007–11* showed non-breeding birds spreading far and wide, with records from the south coast of Ireland, the Isle of Man and both the east and west coasts of southern Scotland. On the European mainland, Rose-ringed Parakeets were present in Belgium, the Netherlands and western Germany at the time of the last published European atlas (Hagemeijer & Blair 1997), with scattered populations elsewhere to the south, but the next European atlas seems likely to reveal significant changes.



Ralph Hancock

217. Juvenile Tawny Owl *Strix aluco* feeding on Rose-ringed Parakeet *Psittacula krameri*, Kensington Gardens, London, May 2014.

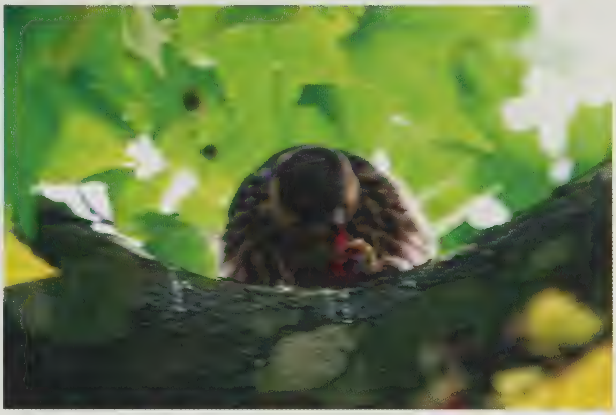
The London parks

The arrival of Rose-ringed Parakeets in some of the London parks has not gone unnoticed by some of the resident predators. The main prey of the local Tawny Owls *Strix aluco* is rodents; an analysis of 13 pellets from the resident pair in Kensington Gardens in 2013 by the Mammal Society found the bones of House Mouse *Mus musculus*, Wood Mouse *Apodemus sylvaticus* and Brown Rat *Rattus norvegicus*, yet the presence of green parakeet feathers in several pellets was also obvious. The first evidence that parakeets form part of the diet of Tawny Owls came from pellets handed in to a Royal Parks Officer, having been picked up in another of the London parks; the paper trail of their origin has been lost but it was probably Bushy Park (Claudia Watts *in litt.*; plate 216). Clearly, however, predation of parakeets takes place at more than one of London's Royal Parks.

The owls appear to have adopted a simple but effective method of hunting parakeets. Perched in the top of a tall tree, waiting for potential prey to arrive in a neighbouring tree at a lower level, the owl simply glides silently down to grab the parakeet. At the time of writing this has been observed on only one occasion, and that attempt in Hyde Park proved unsuccessful (Paul Turner pers. comm.), but on several occasions RH has seen the owls in Kensington Gardens sitting in the upper branches of a tall London Plane *Platanus × acerifolia* that overlooks a Birch *Betula pendula* that is often frequented by parakeets.

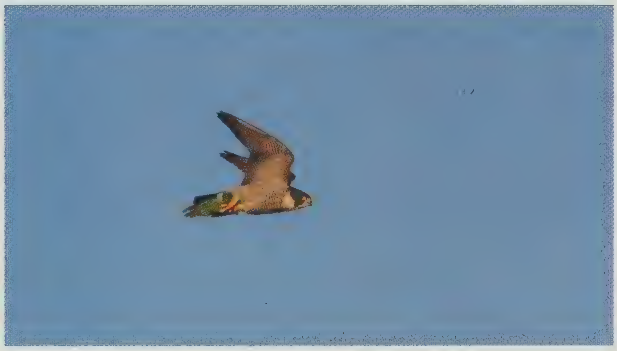
The Tawny Owl populations in Kensington Gardens appear to be thriving. At a nest site that has been in continuous use for 11 years, the number of young have been counted reliably during the past six seasons, 2009–14, when the average brood size has been 4.2 (range 3–5), which is higher than might typically be expected (*BWP*).

Following an unsuccessful attempt in Inner London during 2002 (Woodward & Arnold 2012), the Hobby *Falco subbuteo* bred successfully in Kensington Gardens in 2011. There is evidence of attempted and successful predation by Hobbies on Rose-ringed Parakeets from a variety of sources, both in the parks and elsewhere. Pithon & Dytham (1999) reported a Hobby unsuccessfully attempting to take a parakeet from a roost near Ramsgate railway station, Kent. In August 2014, one was seen to swoop on a parakeet in Kensington Gardens as it was drinking from a puddle, though the attack was unsuccessful (Paul Turner pers. comm.). However, plate 218

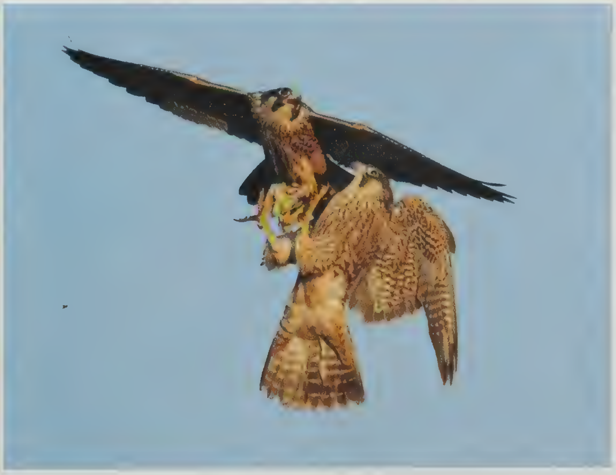


Paul Turner

218. Juvenile Hobby *Falco subbuteo* eating part of a Rose-ringed Parakeet *Psittacula krameri* brought in by its parents, Kensington Gardens, London, 22nd August 2014. This may be the first record in the UK of a Hobby taking a Rose-ringed Parakeet.



Paul Hawkins



Tony Duckett

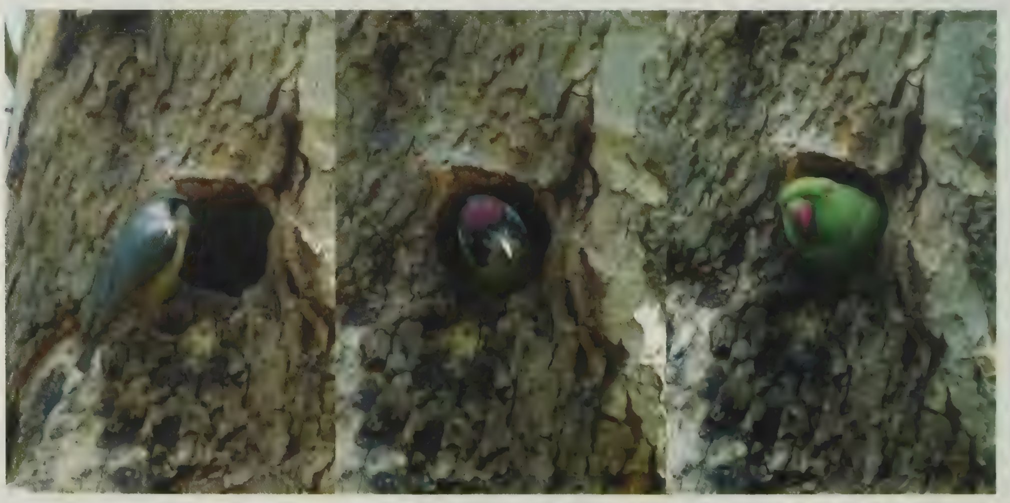
219 & 220. Adult Peregrine Falcon *Falco peregrinus* with Rose-ringed Parakeet *Psittacula krameri* (top), Rainham Marshes, London, December 2014; and two juvenile Peregrines, grappling with a parakeet, central London, July 2012.

shows a young Hobby feeding on a parakeet in Kensington Gardens in the same month. Having bred each year since 2011, it looks as if the Hobby may be set to become a regular breeding bird in the parks, and it would be interesting to know to what extent parakeets supplement the more usual diet of hirundines and dragonflies, which are not uniformly plentiful in the parks.

Peregrine Falcons *Falco peregrinus* are now established breeders in central London (Johnson & Corley 2007), and are seen regularly in the Hyde Park/Kensington Gardens area, where they have been observed chasing parakeets (Andy Sunters pers. comm.). Frequent predation of parakeets by Peregrines has been reported from Lewisham town centre, in south London, where numerous remains have been found (Goode 2014). It seems likely that the large roosts of parakeets closer to the town (for example at Lewisham and Hither Green cemeteries; Goode 2014) are the source in this instance. Studies of the diet of London's Peregrines (e.g. Woodward & Arnold 2012, Johnson 2014), and those of peregrines in other urban areas in Britain (e.g. Drewitt & Dixon 2008), have revealed a remarkable variety of prey species, and it seems likely that they will be able to make good use of the increasing numbers of parakeets in London.

Eurasian Sparrowhawks *Accipiter nisus* may be taking their toll too, as plucked parakeet feathers have been found in the parks on a few occasions by Andy Sunters, who has also observed Sparrowhawks chasing parakeets. Goode (2014) reported watching a parakeet being taken by a Sparrowhawk from a large flock of feeding birds that were stripping a Horse-chestnut *Aesculus hippocastanum* tree of its flowers at Redhill, Surrey.

Evidence that Rose-ringed Parakeets now feature in the diets of raptors and owls in central London is perhaps not surprising, but seems worth documenting as the capital's avifauna continues to change. Monitoring the population levels of parakeets and raptors and observations of the interactions between them will be important to our future understanding of how parakeets fit into our ecosystems. In particular, it will be interesting to see whether predation may temper fears that parakeets will have a significant displacement effect on other hole-nesting species. Strubbe & Matthysen (2007, 2009) found that numbers of Eurasian Nuthatches *Sitta europaea* are lower in areas of Belgium where there are more pairs of parakeets. In Kensington Gardens, RH recorded three different bird species inspecting a former woodpecker hole in a Plane tree, on successive days in 2010, with the parakeet ending up as the tenant. However, a pair of Common Starlings *Sturnus vulgaris* that was evicted by parakeets from a hole near the bottom of the tree in which the Tawny Owls nest fought back in 2014 and 'repossessed' their home.



Ralph Hancock

221. Three different species inspecting the same potential nest hole in Kensington Gardens on consecutive days in April 2010: Nuthatch *Sitta europaea* on 10th, Green Woodpecker *Picus viridis* on 11th and Rose-ringed Parakeet *Psittacula krameri* on 12th.

Acknowledgments

We are very grateful to Julia Clark and Claudia Watts of the Royal Parks Office, and also to Andy Sunters and Paul Turner for supplying useful information on parakeet predation in London.

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Review

Mai Po: The Seasons

By Dave Diskin
Accipiter Press, 2014
Hbk, 212pp; many colour photographs. ISBN 978-988-15091-3-0 £33.99

Hong Kong's Mai Po marshes are winter home to 90,000 water birds and support an abundance of waders on passage. Of particular importance are the 35 IUCN Red List species which regularly use the marshes including Chinese Egret *Egretta eulophotes*, Black-faced Spoonbill *Platalea minor*, Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, Nordmann's Greenshank *Tringa guttifer*, Asian Dowitcher *Limnodromus semipalmatus* and Saunders's Gull *Chroicocephalus saundersi*.

This lavishly illustrated book is a showcase for Dave Diskin's photography. Although birds provide most of the interest, landscapes, butterflies, dragonflies, mudskippers, plants, berries and even gecko eggs all feature. It also sets the scene for what visitors might expect to encounter while following the various pathways and trails, in particular from its world-famous mangrove boardwalk and hides overlooking adjacent Deep Bay.

An introductory chapter provides a brief history of the marshes, including the involvement of WWF Hong Kong in safeguarding this wonderful resource and its wildlife for future generations. Four further chapters follow, each dedicated to one of the four seasons. A short introduction outlining the importance of Mai Po and its wildlife at that season is followed by photographs, which illustrate some of the most important aspects of Mai Po through the year. It is not difficult to imagine yourself being there although, after spending ten years there, I may be slightly biased!

Peter Kennerley

Notes

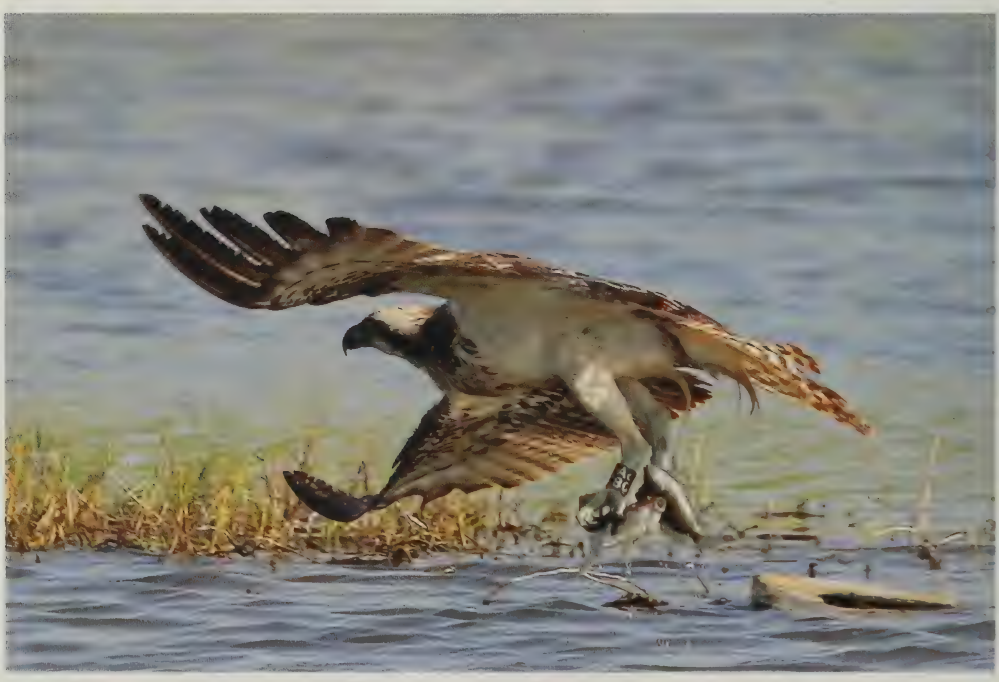
Sibling Ospreys wintering at the same site

On 3rd July 2014, three Osprey *Pandion haliaetus* chicks were ringed by DR in a nest on a power line pylon at Drönnewitz (Mecklenburg-Vorpommern, Germany, 53°54'45"N 12°57'53"E). The chicks were ringed with a clip-ring on the right tarsus and a black darvic ring with a white code on the left tarsus (AB60, AB61 and AB62, respectively).

During November 2014, two of the siblings, AB60 and AB62, were observed fishing in the Technopole lagoons in Senegal (14°45'19"N 17°24'35"W), 5,140 km from the natal site. Technopole is a wetland of some 200 ha in the suburbs of Dakar city, where water gathers in the rainy season and reed pools and marshes remain all year round. The area has plenty of fish, mostly tilapia *Sarotherodon melanotheron*, which attract many piscivorous birds such as pelicans, cormorants and herons, as well as human fishermen with cast nets.

AB62 was photographed when failing to catch a fish on 6th November, while AB60 was photographed several times on 17th, 18th and 19th November, just 500 m from the record of AB62 (plate 222). We recorded AB60 fishing on two evenings at this site. On the first evening it performed a total of seven dives and caught seven fish in 2h 11 min (twice catching two fish in the same dive). On the second evening it made eight dives and caught five fish in 2h 42 min. The fish caught were no more than 20 cm long and were consumed within 6–8 minutes each. AB60 used two fishing methods – directly from a perch and hovering – and was highly territorial, trying to prevent all other Ospreys approaching the pool, not always successfully.

The main wintering quarters of northern and central European Ospreys are in West Africa, north of the equator (see Schmidt & Roepke 2001 and Bai & Schmidt 2012 for German Ospreys). Like other migratory birds, Ospreys determine their migration route using an innate directional instinct (orientational migration) and/or by determining their position in relation to the migration goal (navigational migration)



Aitor Galarza

222. Osprey *Pandion haliaetus* AB60 with two tilapia *Sarotherodon melanotheron* in its talons at the Technopole marsh, Dakar, Senegal, November 2014.

(Alerstam 1982). Both adults and juveniles are known to migrate solitarily (Österlöf 1977), so it is presumed that young Ospreys use only inherited genetic programming when making their first journey to Africa. This observation of two siblings wintering at the same site supports the importance of genetic factors in dictating the direction and destination of the migratory journey in this species, although the possibility that the birds travelled together cannot be ruled out.

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First-calendar-year Mediterranean Gulls with full black hoods and bright bare parts

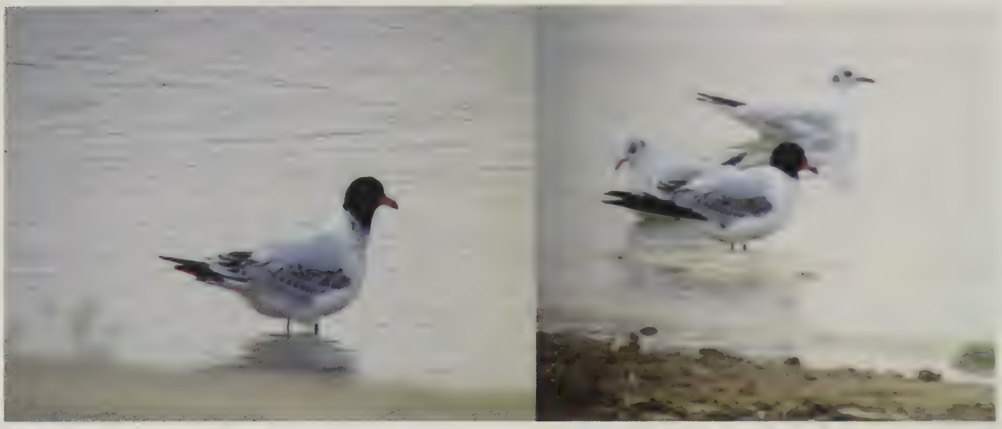
From 28th September to 4th October 2014, a first-calendar-year (1CY) Mediterranean Gull *Larus melanocephalus* with a full black hood and a relatively bright orange bill-base was present in the gull roost at Grafham Water, Cambridgeshire (plate 223).

Apart from the head pattern, this individual was otherwise in typical first-winter plumage, with juvenile wing-coverts and flight feathers, and a dark tail-band. However, the bird possessed a striking, solidly black hood and thin white eye-crescents. It was conspicuous in being the only gull on the reservoir with a full hood. The bill was relatively bright, with an orange base and darker distal third. The legs were dull orange, slightly less bright in colour than the bill-base. The bird was also particularly vocal (unusually so considering that, for example, *BWP* suggests the species is 'generally silent in autumn and winter').

Subsequent correspondence drew attention to two other records of Mediterranean Gulls, apparently of the same age and in a similar state of advanced plumage and bare-part colours, in Bulgaria (in December 2009) and Spain (in November 2012) (M. Muusse and C. Carboneras *in litt.* respectively). The Spanish bird was apparently also notably vocal. These appear to be the only other known records of such plumage in this species.

During a day visit to the Natural History Museum, Tring, I was unable to find any examples of 1CY birds displaying similarly advanced plumage and bare-part colour among any of the gull species that show a dark hood in adult plumage. Furthermore, no reference to similar birds was found in Malling Olsen & Larsson (2007) or *BWP* and perhaps the most likely explanation for these birds having a full hood so early in life is some form of hormonal imbalance or dysfunction (C. Carboneras and K. Malling Olsen *in litt.*).

Several hormones have been studied with respect to avian coloration, including the steroidal androgens (e.g. testosterone) and oestrogens, as well as the peptide hormone luteinising hormone (LH). Owing to the complex nature of hormonal pathways, the specific hormones that control colour may not always be clearly recognisable (Kimball 2006). However, androgens appear to be necessary for the development of breeding plumage in at least three gull species, Black-headed Gull *Chroicocephalus ridibundus*, Laughing Gull *L. atricilla* and American Herring Gull *L. smithsonianus* (van Oordt & Junge 1933; Noble & Wurm 1940; Boss 1943; Groothuis & Meeuwissen 1992). Androgens also appear to be important in most species in terms of bare-part seasonal dichromatism (Kimball 2006).



Andrew Tongue

223. First-calendar-year Mediterranean Gull *Larus melanocephalus*, Grafham Water, Cambridgeshire, September 2014.

Endocrine disruption caused by pervasive anthropogenic substances in the environment has been well documented for various taxa, although, in gulls at least, such effects might be more closely associated with those taxa possessing oestrogen-dependent traits, rather than androgen-dependent traits, as described above. However, this may be an area for further research if similar individuals are reported in future.

Acknowledgments

I would like to thank the following for their comments and thoughts: Jack Ashton-Booth, Carles Carboneras, Klaus Malling Olsen, Mars Muusse and John Sweeney. Thanks are also due to Hein van Grouw at NHM Tring, for arranging access to skins and also for his comments and for providing important literature.

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Song Thrush eating Common Frog

On 12th July 2014, in a field at West Bagborough in Somerset, I watched a Song Thrush *Turdus philomelos* seize a small Common Frog *Rana temporaria* from a tuft of grass. The frog, which I estimated to be about 9 cm in total length (about half of that being the hind legs), was carried to a nearby patch of bare ground where, held by its legs, it was repeatedly beaten on the ground. After 2–3 minutes, the frog was slowly (and with some considerable difficulty) swallowed, head first, after which the bird flew off.

According to *BWP*, a Song Thrush has been recorded taking a lizard *Lancerta*, attacking a Slow-worm *Anguis fragilis* and trying to eat a shrew (Soricidae). There is no mention of amphibians as Song Thrush prey, however, nor as prey of the larger Mistle Thrush *T. viscivorus.*

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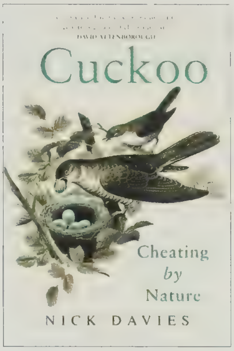
Reviews

Cuckoo: cheating by nature

By Nick Davies
Bloomsbury, 2015
Hbk, 289pp; 21 colour and five black-and-white photographs, several illustrations
ISBN 978-1-4088-5656-7, **£16.99**



Everyone knows the Common Cuckoo *Cuculus canorus*, by voice if not by sight. For generations, it has been welcomed as a harbinger of spring, and is known as the only bird in Britain that is a brood parasite. The unwitting foster parents then raise the young Cuckoo after it has thrown their own eggs and chicks out of the nest. It is this amazing story of cheating, trickery and gullibility that Nick Davies has studied for 30 years and which he tells so engagingly in this book. Nick is Professor of Behavioural Ecology at the University of Cambridge, and most of his studies were made at nearby Wicken Fen, where Cuckoos lay in the nests of Reed Warblers *Acrocephalus scirpaceus.*

Some aspects of Cuckoo behaviour had been uncovered between 1918 and 1922 by the remarkable Edgar Chance, a businessman glass-maker who studied Cuckoos parasitising Meadow Pipits *Anthus pratensis* on heathland in the Wyre Forest, in Worcestershire. By then it was accepted that Cuckoos must exist in the form of several races (or gens), each specialising on a different main host – Reed Warbler, Meadow Pipit, Dunnock *Prunella modularis* and Pied Wagtail *Motacilla alba* being the main host species in Britain. Before the advent of DNA, the most obvious difference between these Cuckoo races was in their differently coloured eggs, which were generally similar in appearance to their host eggs (or at least were of a colour that was accepted by the host).

Davies and his colleagues have added much that is new to these early studies. By use of observation and elegant field experiments, they set out to answer some fundamental questions about the interactions between Cuckoos and their hosts. What does the Cuckoo do to trick its hosts into accepting a strange egg in their nest and to feed such an oversized chick which looks nothing like their own young? Why do the hosts accept the egg and young of a Cuckoo in their nest, rather than discarding the egg or deserting the chick? Why does the level of egg mimicry vary, with some Cuckoo races laying eggs that look almost identical to the host eggs, and others (such as Dunnock Cuckoos) laying eggs that look strikingly different from the host eggs?

The research has uncovered one of the best examples yet described of an 'evolutionary arms race', in which hosts evolve ever better defences against Cuckoos, and Cuckoos in turn come up with more novel forms of trickery. Different stages in this arms race can be seen in different races of Common Cuckoos in Britain and across their range, as they exploit different host species. But even further advances in the arms race can be seen in other parasitic birds around the world, with some amazing examples from honeyguides (Indicatoridae) and *Vidua* finches in Africa, and bronze cuckoos *Chrysococcyx* in Australia. Their individual stories provide great insight into the way that cheating and forgery evolve and thrive in the natural world.

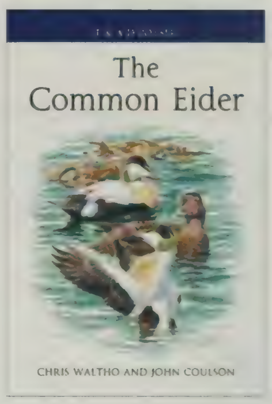
One frequently asked question is why Cuckoos parasitise such a narrow range of host species, when many other common species of similar size have nests and diets that would suit a young Cuckoo? Experiments on some of these potential hosts have revealed that they have effective defences, for example by ejecting or deserting strange eggs, or refusing to feed strange chicks. So could some potential Cuckoo host species in Britain and elsewhere be no longer parasitised because they have 'won' the arms race, and evolved effective defences? Will they eventually lose these defences, and again become vulnerable to Cuckoos, starting another arms race? One nice thing about this book is that it continually raises new questions such as these, perhaps pointing the way to another 30 years of fascinating research.

Another welcome feature of the book is that it is engagingly written in plain English, more or less as a detective story, building up the evidence from one series of experiments after another, as each set of answers raises other questions. The colour photographs of Cuckoo behaviour are dramatic and well chosen and the book is illustrated throughout by some evocative field drawings by James McCallum. I suspect that everyone with an interest in the natural world will enjoy reading this book. It illustrates dedicated field observation, detective work and experiment at its best.

Ian Newton

The Common Eider

By Chris Waltho and John Coulson
Poyser, 2015
Hbk, 352pp; numerous graphs and tables, eight colour plates
ISBN 978-1-4081-2532-8, £50.00



With such a wide geographic distribution, large population size and long history of interaction with man, it is perhaps surprising that it has taken until 2015 for the first English language monograph of the Common Eider *Somateria mollissima* to be published. Perhaps the challenge has been too daunting! Chris Waltho has counted Eiders around the Firth of Clyde for over 40 years, while John Coulson's intensive studies on the islands off northeast England began in the late 1950s. Both authors draw on their own work in this book, particularly the long-term datasets from Coquet and the Farnes, but also attempt to synthesise the vast literature on the species that has accumulated from around the northern hemisphere over the last 50 years and more. However, in the introduction they admit to having been selective in the subjects covered, and the reader is referred elsewhere to more in-depth information on social and sexual behaviour, eider farming and pollutants.

The bulk of the book seems to fall into two halves, perhaps reflecting the division of labour between the authors. The first five chapters cover morphology, taxonomy, distribution, numbers and movements, food and feeding, and predators, parasites and disease. There is a wealth of information here, much of it liberally referenced, but some sections are rather tough going for the reader, not least the 12 pages on biometrics of the six recognised subspecies, which contain 16 figures and seven tables. Here, there is no distinction between measurements from live birds and from study skins, which almost certainly contributes to the 20 mm difference in wing lengths of the two samples of *S. m. faeroensis* given in one figure. Of much interest to most birders is how reliably the different subspecies can be distinguished in the field; here, while a half-page figure of black-and-white drawings compares the heads of adult males, a double-page spread of colour photographs from the different breeding locations would have done the job far better. Space is (or should be) at a premium in a book such as this, and tables 2.3 and 2.4 could usefully have been merged; fig. 2.3 and table 3.1 simply repeat information presented elsewhere and are superfluous; while the distribution map of the six subspecies is woefully small. I didn't go hunting for errors, but the reference to Killer Whales *Orcinus orca* predating Common Eiders in the Faroes in April (2009) involved Common Guillemots *Uria aalge*, not eiders; while fig. 5.4. (acanthocephalan infection of Dutch Eiders) erroneously compares adults with immatures, instead of adults and immatures with juveniles.

The next seven chapters cover different aspects of breeding, ending with a lengthy examination of Common Eider mortality, survival and the phenomenon of non-breeding. Again, the literature on these subjects is very extensive. The style of the book also changes somewhat here. Fewer statements are supported by references, some topics are explored at length, there is more comment and opinion, and a fair bit of tilting at particular windmills. Some very interesting recent and unpublished data from the Sands of Forvie and Ythan Estuary is presented that updates those from the 1960s and 1970s. I found the sections on the crèche and 'auntie' systems fascinating reading, while a thought-provoking chapter discusses whether the Common Eider is really a 'colonial' species and actually benefits (or otherwise) from nesting in high densities.

A penultimate chapter on exploitation, management and conservation covers a number of topics, including a discussion of the rather contentious issues of hunting in Denmark and the current and former size of the population using the Baltic/Wadden Sea flyway (a minefield I don't wish to stray into commenting on). Assertions that evidence from BTO nest record cards suggest that (illegal) egg-collecting is ongoing in parts of mainland eastern Scotland are left hanging, with no data presented, while a rather short section on oil spills perhaps underestimates the scale and population impact of some past incidents. A text list of 19 cases of oiled eiders (in which '1994 Shetland' should read '1993 Shetland') really should have been tabulated and referenced, with details of location, season and the number of birds involved; '1972 Denmark' (mentioned twice) tells the reader nothing, yet the combined mortality of Common Eiders in these incidents, in March and December 1972, was at least 20,000 birds and possibly much higher. One potential area of conflict that is not covered is the development and extent of offshore renewable energy.

A fascinating final chapter, by Diana Solovyeva, examines the similarities and differences between the three species of *Somateria* eiders and Steller's Eider *Polysticta stelleri*. As in other places in the book, the manner in which some information is presented here is puzzling, with a table of major moulting sites for migratory populations of the four species listed in alphabetic order rather than by geography. Examples elsewhere are even more frustrating, or simply sloppy. In table 3.4 (moult migrations and their distances in male Common Eiders), 12 out of 23 rows in the column for references simply contain question marks, and two rows present no information. In table 12.1 (estimates of annual survival rate of adult female Common Eiders), years of study and accuracy are missing for one Danish figure, but clearly indicated in the *Bird Study* paper referred to. In Appendix 2 (which lists important conservation sites for Common Eiders – though there is no indication of what basis these were selected on, or formal status), provinces are given for 72 Canadian sites listed, but not for 26, and their ordering appears completely random. Getting the facts correct is the responsibility of the authors, but checking for inconsistencies and potential oversights, and ensuring the layout and level of detail provided help the reader get the most out of the book is the responsibility of the editor, and all could have been looked at more closely in the final draft.

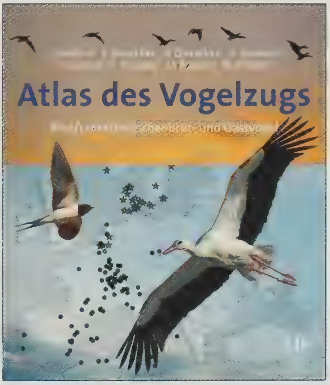
Each chapter is headed by a delightful vignette by Tim Wootton, while 28 colour photographs of Common Eiders (rather squashed onto seven pages) illustrate various stages of development, behaviour and moult, although none are assigned to subspecies and no locations are given. There are also single portrait photos of drake King *S. spectabilis*, Spectacled *S. fischeri* and Steller's Eiders.

The comments above notwithstanding, the authors are to be congratulated on pulling so much information out of the scientific literature and making it accessible in one volume. I enjoyed reading it and learnt a lot, as will anyone who buys it.

Martin Heubeck

Atlas des Vogelzugs: Ringfunde Deutscher Brut- und Gastvögel

By Franz Bairlein, Jochen Dierschke, Volker Dierschke, Volker Salewski, Olaf Geiter, Kathrin Hüppop, Ulrich Köppen and Wolfgang Fiedler
Aula Verlag, 2014
Hbk, 664pp; many black-and-white illustrations, 250 distribution maps
ISBN 978-3-89104-770-5, £58.99



The front cover of this atlas depicts a metal-ringed White Stork *Ciconia ciconia* in flight, no doubt in homage to 'Arrow stork', a female White Stork from Mecklenburg in northeast Germany which in spring 1822 returned to her nest with an African hunting spear embedded in her body. 'Arrow stork' thus became one of the first birds to provide direct evidence of her species' migration routes. Spears have now been replaced by rings and the *Atlas des Volgelzugs* is a tribute to the skill and enthusiasm of the hundreds of volunteers who have contributed to the ringing schemes throughout Germany.

This is the first migration atlas to be published using German ringing and recovery data since 1931. Since then, the growth of the German ringing scheme, coordinated by offices in Hiddensee, Radolfzee and Helgoland, and the collation of European-wide ringing data, through the EURING databank, have greatly increased the potential scope of such a publication. Utilising a remarkable 1.5 million recoveries, of almost 975,000 individual birds, the *Atlas des Volgelzugs* details the movements and fates of 298 species which breed, overwinter or migrate through Germany.

The publication opens with a brief history of scientific bird ringing in Germany, from the first use of metal rings, through to the establishment of the ringing schemes, and up to the present day and the deployment of the latest tracking technologies. This account is interspersed with photographs, diagrams and old ringing records, which paint a fascinating picture of the people and birds at the heart of bird ringing in Germany.

By far the greatest amount of space in the atlas is given over to the individual species accounts, which are presented in a clear and standardised format, outlined in detail at the start of the book and repeated on the back cover. This clarity greatly helps the reader to interpret the movements of species and individuals, drawing out patterns within the ringing and recovery data. As in the rest of the publication, the majority of text in the species accounts is in German. However, the pictures tell most of the story, with the key information for each species illustrated in a number of very comprehensive maps. In addition, figure legends and a summary of the accounts for each species are provided in English.

For each species, where the data permit, separate maps firstly summarise all German and foreign ringing and recovery locations before showing the movements of individual birds during autumn and spring migration. These are accompanied by winter maps, illustrating the distribution of German breeding birds on their foreign wintering grounds and/or the breeding origin of birds overwintering in Germany. In this way the atlas tells some fascinating stories, from the single sub-Saharan recovery of a Common Whitethroat *Sylvia communis* in Ghana, to the emergence of the recently evolved and growing autumn migration route of Blackcaps *S. atricapilla* to their winter homes in Britain and Ireland. Also included in the accounts is the fate of 'Arrow stork's' descendants, which have seen some recent developments in their migration routes, since more and more individuals are now avoiding overwintering in Africa, instead stopping in Spain or even remaining in Germany. Perhaps they have learnt from the fate of their ancestor!

The *Atlas des Volgelzugs* is a fantastic resource for ringers, birders and the scientific community. It sits neatly alongside the other European ringing atlases, allowing us to build up a picture of the movements and fates of species across the continent.

Catriona Morrison

Tales of Remarkable Birds

By Dominic Couzens
Bloomsbury, 2015
Hbk, 224pp; c. 120 colour photographs
ISBN 978-1-4081-9023-4, £20.00

This book comprises a series of 40 short essays, each relating to a species or group of species, which exhibit some fascinating aspect(s) of bird behaviour. Five subjects are chosen from each of seven continents (the Americas are split in two and Antarctica is included) with the eighth group relating to islands. While many of the topics covered will be known to *BB* readers – bowers, sexual selection, lekking, polyandry, food-caching, larders, flocking and vagrancy, to name but a few – how many of us have stopped to think why, or how, these behaviours have evolved? I am sure, too, that there will be more than one surprise tucked between this book's covers for every reader. I was unaware of the kidnapping antics of the Australian White-winged Chough *Corcorax melanorhamphos*, that subordinate Varied Sittellas *Daphoenositta chrysoptera* get to roost in the middle of the flock, or that the white-striped and tan-striped morphs of White-throated Sparrows *Zonotrichia albicollis* have different breeding strategies.

This is a nicely designed, well-written book populated with some stunning photographs. Birds are enthralling creatures and anyone whose interest extends beyond simply naming them will find it an enjoyable and informative read.

Paul Harvey

Bill Oddie Unplucked

By Bill Oddie
Bloomsbury, 2015. Hbk, 224pp; black-and-white drawings.
ISBN 978-1-4729-1531-3, £14.99

This is a compilation of 50 of Bill Oddie's essays, magazine articles and blogs from the last 20 years. It's a 'bedside book'-style compilation, designed to give you ten minutes of birding-related entertainment at bedtime, while commuting or on the loo.

For those who have read Bill Oddie's books since the original – and best – little black bird book, you know exactly what you're getting – the writing style, the cartoon pen-and-ink drawings, etc. It's 'witty, entertaining, educational and essential' according to Chris Packham on the back cover. What more can you ask? The content is broader than it used to be and perhaps that makes it more educating and essential. Perhaps it's just me who preferred his earlier efforts, which were more about birding…

RR

Recent reports

Compiled by Barry Nightingale and Harry Hussey

This summary of unchecked reports covers early April to early May 2015.

Headlines In the first half of this review period it was, unexpectedly, Nearctic visitors that stole the show, with Britain's second Great Blue Heron, on Scilly, and third Hudsonian Godwit, in Somerset. The best of the spring overshoots included a Great Spotted Cuckoo in Glamorgan, Gull-billed Terns in Cornwall and Co. Dublin and two Eurasian Scops Owls, while Black-winged Stilts, Hoopoes, European Bee-eaters and Red-rumped Swallows appeared in above-average numbers. As this review period came to a close, there were other major highlights, though, including Britain's second Citril Finch and a male Moltoni's Warbler, both in Norfolk, and a Dark-eyed Junco in Shetland.

American Wigeon ***Anas americana*** Long-stayers in Shetland and Yorkshire, new arrivals in Northumberland, Orkney and Co. Wexford. **Black Duck** ***Anas rubripes*** Long-stayers Tresco (Scilly), to 17th April; and Strontian (Highland), seen again 19th April. **Blue-winged Teal** ***Anas discors*** The Shunan (Orkney), long-stayer to 12th April; Donna Nook (Lincolnshire), 12th–28th April. **Lesser Scaup** ***Aythya affinis*** Long-stayers Martnaham Loch (Ayrshire), Cardiff Bay Wetlands (East Glamorgan) and Lough Gara (Co. Sligo); also South Uist (Outer Hebrides), 11th–15th April; Wintersett Resr (Yorkshire), 4th–11th May (nasal-tagged bird previously at Llangorse Lake, Breconshire, until 24th February 2015). **King Eider** ***Somateria spectabilis*** Ythan Estuary (North-east Scotland), long-stayer to 11th May. **Harlequin Duck** ***Histrionicus histrionicus*** Long-stayers Brora (Highland), to 30th April, and River Don (North-east Scotland), to 11th May. **Surf Scoter** ***Melanitta perspicillata*** Long-stayers Cheshire & Wirral (up to four), Lothian and Orkney (two).

Pacific Diver ***Gavia pacifica*** Marazion/Penzance (Cornwall), long-stayer again, 30th April to 4th May. **White-billed Diver** ***Gavia adamsii*** Up

Cavell Smith

224. First-winter Great Blue Heron *Ardea herodias*, St Mary's, Scilly, April 2015.

Richard Stonier

Kit Day

225 & 226. Hudsonian Godwit *Limosa haemastica*, with Black-tailed Godwits *L. limosa*, Meare Heath, Somerset, April 2015.

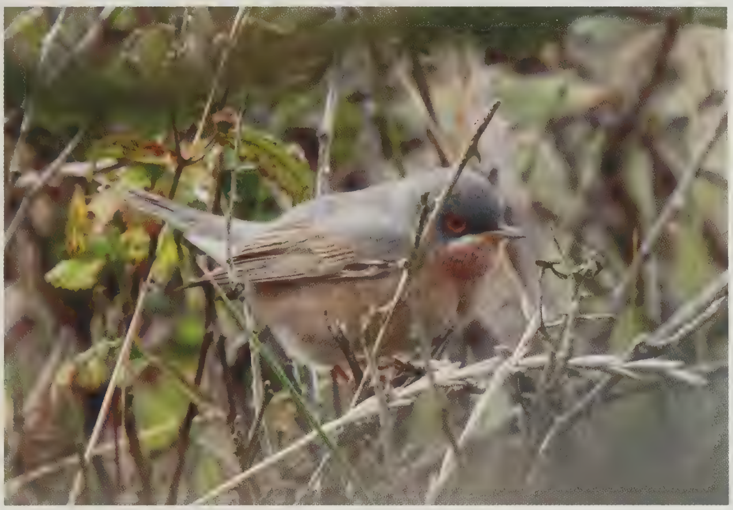
to three, Portsoy (North-east Scotland), 11th April to 10th May; counts at sea from Portsoy included ten on 18th April, seven on 9th May and six between Portsoy and Cullen (Moray & Nairn) on 28th April. Elsewhere: Gruinard Bay (Highland), 15th April; Lewis (Outer Hebrides), three, 16th April, one to 17th; South Ronaldsay/Water Sound (Orkney), 17th April to 9th May; Eshaness, 1st May, Quendale (both Shetland), 2nd May.

Wilson's Storm-petrel ***Oceanites oceanicus*** At sea, 110 km WNW of Slyne Head (Co. Galway), 21st April.

Night Heron ***Nycticorax nycticorax*** Up to six long-stayers remained on Scilly, while there were singles at Marazion (Cornwall), Kingsbridge and Black Hole Marsh (both Devon), Bournemouth (Dorset), Burgh-le-Marsh (Lincolnshire) and Attenborough (Nottinghamshire), and two at Kinsley (Yorkshire). **Squacco Heron** ***Ardeola ralloides*** Polgigga (Cornwall), 5th–10th May; Prawle Point (Devon), 9th–11th May. **Cattle Egret** ***Bubulcus ibis*** Two long-stayers in Kent, at Dungeness, to 26th April and Warehorne, to 11th May. **Great Blue Heron** ***Ardea herodias*** St Mary's, 14th–15th April and 27th April to 7th May, Bryher (both Scilly), 16th–25th April. **Purple Heron** ***Ardea purpurea*** Wallsend (Northumberland), 14th April; Drift Resr, 20th and 28th–30th April, Penzance (both Cornwall), 21st April; Broad Lough (Co. Wicklow), 29th April; Bryher and St Mary's, 3rd–4th May. **Glossy Ibis** ***Plegadis falcinellus*** Records from Cambridgeshire, Nottinghamshire and Co. Waterford.

Pied-billed Grebe ***Podilymbus podiceps*** Berkeley (Gloucestershire), 24th April; Leighton Moss (Lancashire & N Merseyside), 25th April to 4th May.

Black Kite ***Milvus migrans*** Records from Cornwall, Co. Derry, Dorset, Hampshire, Kent, Norfolk, Shetland and Yorkshire. **White-tailed Eagle** ***Haliaeetus albicilla*** Wandering bird in Norfolk 18th–25th April, same Gibraltar Point (Lincolnshire), 25th April.

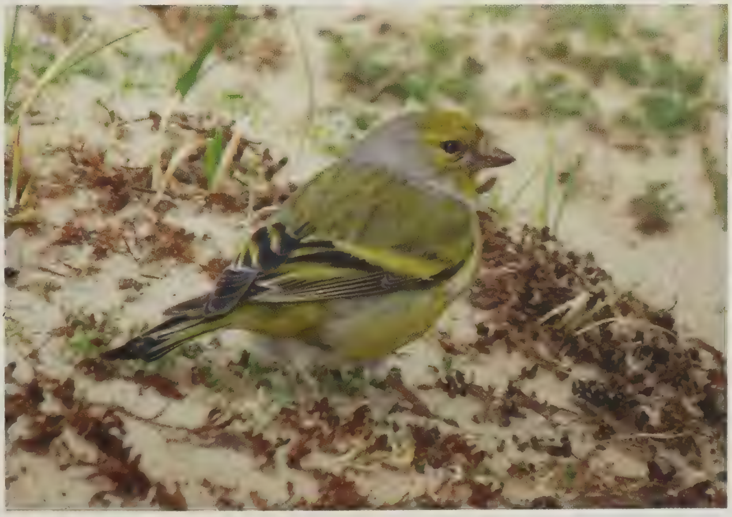

Steve Gantlett

227. Male Moltoni's Warbler *Sylvia subalpina*, Blakeney Point, Norfolk, May 2015.

Black-winged Stilt *Himantopus himantopus* Up to eight birds at six sites in Kent, also Cambridgeshire (three), Essex (two), Lincolnshire, Staffordshire (two) then same Cheshire & Wirral, Suffolk (two) and Sussex. **Kentish Plover** *Charadrius alexandrinus* Cley (Norfolk), 25th April; Pegwell Bay (Kent), 26th April; Steart Point (Somerset), 2nd–3rd May; Dornoch (Highland), 7th–10th May. **Dotterel** *Charadrius morinellus* Widespread passage in early May including peaks of 24 Choseley (Norfolk) and 29 Westmuir (Angus & Dundee). **Hudsonian Godwit** *Limosa haemastica* Meare Heath (Somerset), 24th–25th April, and 29th April to 3rd May. **White-rumped Sandpiper** *Calidris fuscicollis* Papa Westray, 25th–28th April, North Ronaldsay (both Orkney), 1st–3rd May. **Red-necked Phalarope** *Phalaropus lobatus* Blacktoft Sands (Yorkshire), 26th April. **Greater Yellowlegs** *Tringa melanoleuca* Titchfield Haven (Hampshire), long-stayer intermittently to 9th May. **Lesser Yellowlegs** *Tringa flavipes* Rogerstown (Co. Dublin), long-stayer to 14th April; Wheldrake Ings (Yorkshire), 15th April; Low Newton-by-the-Sea (Northumberland), 11th May.

Gull-billed Tern *Gelochelidon nilotica* Three Burrows, 14th April, Walmsley Sanctuary (both Cornwall), 19th April; Swords (Co. Dublin), 6th May. **White-winged Black Tern** *Chlidonias leucopterus* Broom GP (Bedfordshire), 24th April. **Bonaparte's Gull** *Chroicocephalus philadelphia* Milford-on-Sea, 15th April, Southampton (both Hampshire), 3rd–11th May; Bowling Green Marsh (Devon), 9th–10th May. **Laughing Gull** *Larus atricilla* Long-stayers Ballycotton (Co. Cork), to 30th April, and New Brighton (Cheshire & Wirral) or Seaforth (Lancashire & N Merseyside), to 17th April. **American Herring Gull** *Larus smithsonianus* Long-stayers Black Ball Harbour (Co. Cork), to 19th April, St Just (Cornwall), 30th April to 3rd May.

Great Spotted Cuckoo *Clamator glandarius* Cwm Cadlan (East Glamorgan), 15th–17th April. **Eurasian Scops Owl** *Otus scops* Great


Richard Bayldon

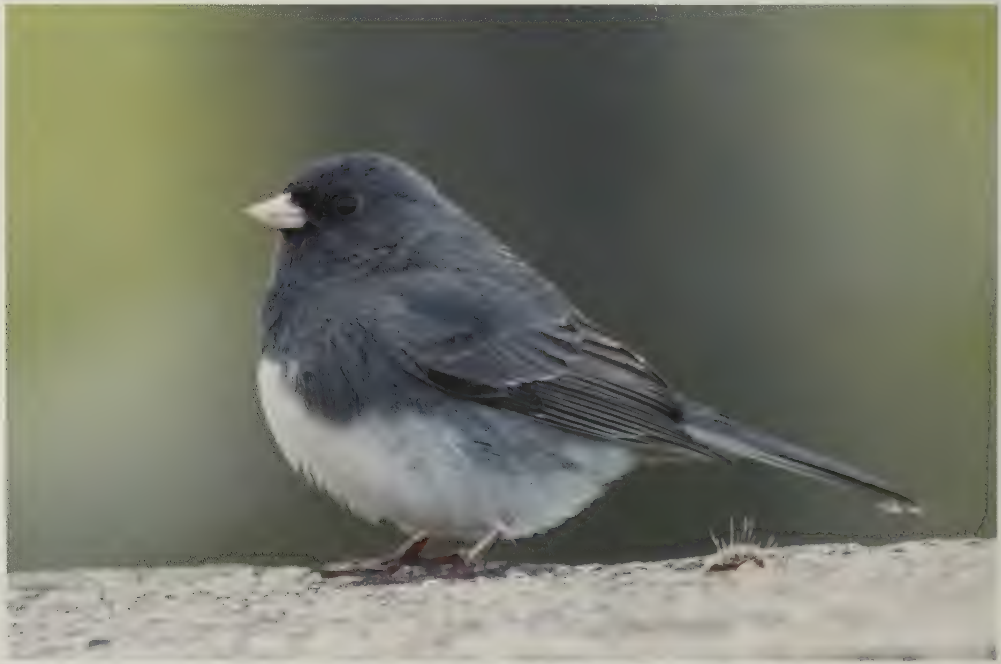
228. Male Citril Finch *Carduelis citrinella*, Burnham Overy Dunes, Norfolk, May 2015.

Saltee (Co. Wexford), 11th April; St Kilda (Outer Hebrides), found dead, 1st May. **Snowy Owl** ***Bubo scandiacus*** Gleninagh Mountains (Co. Clare), 6th–20th April; Tarmon (Co. Mayo), 26th April; Cuilcagh Mountain (Co. Fermanagh), 7th May. **Alpine Swift** ***Apus melba*** Flamborough Head (Yorkshire), 11th April; Verwood (Dorset), 12th April; Rutland Water (Leicestershire & Rutland), 14th April; Meols (Cheshire & Wirral), 22nd April; Spurn, 7th May, Ilkley, 8th May, Pugney's CP then Calder Park (all Yorkshire), 9th May. **Hoopoe** ***Upupa epops*** A widespread arrival in April with at least 65 in Ireland. **European Bee-eater** ***Merops apiaster*** After the first, in Cleveland on 11th April, further records from Cheshire & Wirral, Cornwall (two), Kent (a group of five, also seen in Sussex), Norfolk, Oxfordshire, Scilly, Suffolk, Sussex and Yorkshire. **Woodchat Shrike** ***Lanius senator*** Records from Cornwall (three), Co. Cork (two), Devon, Pembrokeshire (three) and Co. Wexford. **Red-rumped Swallow** ***Cecropis daurica*** Records from Cambridgeshire, Co. Cork, Cornwall (two), Devon, Dorset, Essex, Greater Manchester (two), Kent (up to three), Lincolnshire, Scilly, Somerset, Suffolk, Sussex (up to three) and Yorkshire (up to three).

Western Bonelli's Warbler ***Phylloscopus bonelli*** Hengistbury Head (Dorset), 5th May. **Subalpine Warbler** ***Sylvia cantillans*** Brownstown Head (Co. Waterford), 11th–17th April (Western); Kynance Cove, 13th–14th April, two 15th, one to 16th (both Western), Nanjizal, 19th–20th April (Eastern), Land's End, 22nd April, Kenidjack (all Cornwall), 25th April; Bardsey (Caernarfonshire), 9th May; Blakeney Point (Norfolk), 11th May. **Moltoni's Warbler** ***Sylvia subalpina*** Blakeney Point, 11th May.

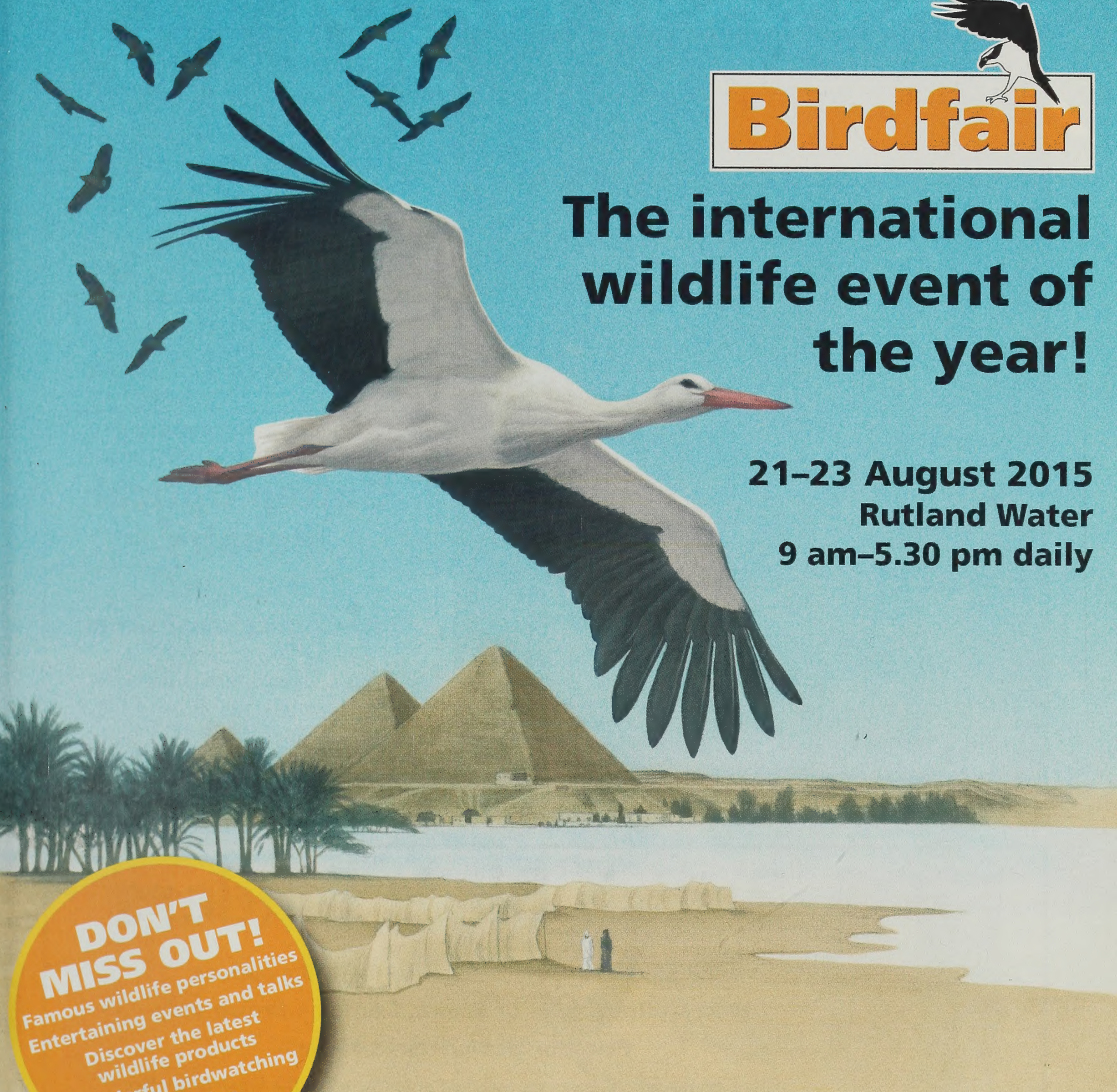
Rose-coloured Starling ***Pastor roseus*** Ryton (Co. Durham), found dead, 3rd May. **Tawny Pipit** ***Anthus campestris*** Fair Isle, 4th–6th May; Portland Bill (Dorset), 9th–10th May. **Red-throated Pipit** ***Anthus cervinus*** Hengistbury Head, 24th April; Ludworth Moor (Derbyshire/Greater Manchester), 3rd–4th May; Seaton Common (Cleveland), 10th–11th May.

Citril Finch ***Carduelis citrinella*** Burnham Overy Dunes (Norfolk), 10th–11th May. **Dark-eyed Junco** ***Junco hyemalis*** Toab (Shetland), 11th May. **Little Bunting** ***Emberiza pusilla*** Long-stayer in East Glamorgan, with others at Flamborough Head, Heacham (Norfolk) and Gibraltar Point.



Roger Riddington

229. First-summer male Dark-eyed Junco *Junco hyemalis*, Toab, Shetland, May 2015.



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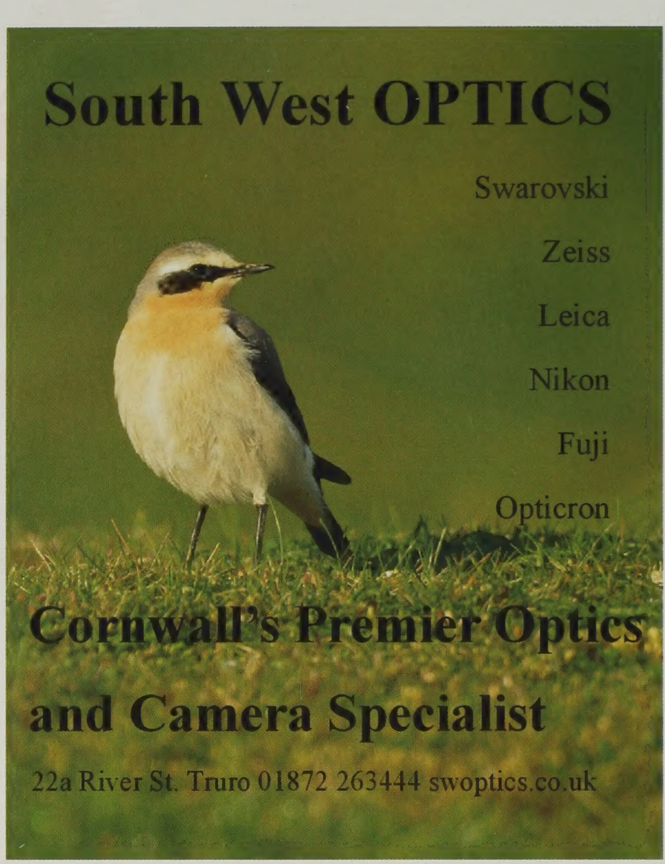

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